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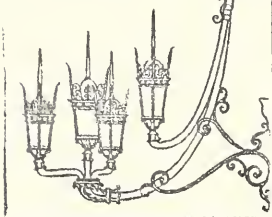
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# Labor Area Trends

## In Supply And Demand

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Fiscal Year  
1978 - 1979

Boston SMSA  
Massachusetts

The Commonwealth Of Massachusetts  
Division Of Employment Security  
John F. Hodgman, Director

M36  
M38







LABOR AREA TRENDS  
IN SUPPLY AND DEMAND  
FISCAL YEAR 1978-1979

MASSACHUSETTS/BOSTON SMSA



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## INTRODUCTION

Information on the supply and demand of labor is crucial for economic planning and educational planning. For a business to succeed, five critical factors: money, manpower, materials, management, and markets must be sufficiently available. High net demand for labor occurs when the demand for a product or a service is so great that additional workers are needed to meet production requirements timely and efficiently. Individuals who are unemployed desire information on occupations providing best opportunities for stable employment. Manpower training agencies and educational institutions desire to provide vocational training in occupations in which the probability of finding remunerative and satisfying employment is greatest.

Net high demand occupations are those in which the ratio of identifiable applicants to known job openings is presently small and for which projection of employment requirements for the future is high.

Field surveys were conducted in each labor market area. Of particular interest were interregional differences in demand and factors in a labor market area which contribute to supply-demand imbalances in another labor market area. The firms were chosen randomly.

The survey included questions on sources of recruitment. The sources included agencies (public employment, private employment, and educational institutions); advertising (newspaper want ads, trade journals, and professional associations); internal recruitment (rehires, promotions, and referrals from current employees); and direct applications (walk-ins). Sources of recruitment were differentiated from sources of hires. Geographical residence was surveyed in order to determine commuting distance and interlabor area commuting patterns. Minimal educational and experience requirements were differentiated from typical educational attainment levels and actual months of experience of new hires. Data on beginning wages with no experience, beginning wages with one year experience, average wages, and maximum wages for the occupation surveyed were collected. Growth in the occupation was determined by the number of positions in calendar year 1976, 1977, and 1978 to date. Replacement hires and growth hires were differentiated. Employers were asked to project new positions and new hires in 1979 in the occupation.

The Occupational Supply Sources Survey included information on the total graduates in June 1978, estimated graduates in June 1979, and estimated graduates in June 1980. Estimates based on historical experience were obtained on the percent of graduates who remained in the trade and who remained in the Labor Market Area.



NET GROWTH OCCUPATIONS  
SUPPLY AND DEMAND STUDIES  
BY LABOR MARKET AREA

Boston SMSA: Research and Program Development  
Office of Economic Affairs

Computer Programmers  
Electronic Technicians  
Bookkeepers  
Computer Operators  
Insurance Adjusters and Examiners  
Keypunch Operators  
Secretary, Legal  
Secretary, Medical  
Typists

Clinical Lab Technicians  
Dental Hygienists  
Licensed Practical Nurses  
Sales Representative, Wholesale Trade  
Air Conditioning, Heating,  
Refrigeration Mechanics  
Data Processing Machine  
Repair Person

Brockton SMSA

Licensed Practical Nurses  
Machinist/Tool and Die Makers  
Typists

Fall River LMA

Licensed Practical Nurses  
Sewers/Stitchers  
Machinists/Tool and Die Makers

Fitchburg-Leominster LMA

Licensed Practical Nurses  
Machinists  
Cooks/Chefs

Lawrence-Haverhill SMSA

Licensed Practical Nurses  
Machinists  
Sheet Metal Workers

Lowell LMA

Licensed Practical Nurses  
Machinists  
Assemblers





New Bedford LMA

Licensed Practical Nurses  
Sewers/Stitchers  
Checkers/Examiners

Pittsfield LMA

Licensed Practical Nurses  
Machinists  
Cooks/Chefs

Springfield-Chicopee-Holyoke LMA

Licensed Practical Nurses  
Machine Operators/ Machinists  
Welders

Worcester LMA

Licensed Practical Nurses  
Machinists / Machine Tool Operators  
Clerk-Typists



## MACHINIST, TOOL AND DIE MAKER, AND MACHINE OPERATOR

### Employers Definition of Occupation

There were considerable differences in the definition of machinists from firm to firm in every labor market area. In the Pittsfield Labor Market Area, one personnel manager commented that the definition of a machinist in the Dictionary of Occupational Titles pertained more to an engineer than a machinist. In the Lawrence-Haverhill Labor Market Area, the Lowell LMA, and the Springfield LMA, individuals with titles of machinists who worked in large firms frequently performed the tasks of a machine operator. The situation was complicated by the fact that graduates of vocational-technical schools referred to themselves as machinists but were used by employers as machine operators. In the Brockton SMSA, all-around machinists who could set-up and operate machines and read blueprints were difficult to locate. In the Fall River LMA, the range of skills covered third class machinists to fully experienced tool and die makers. One company employed people who were primarily set-up operators for a specific machine. Another firm referred to Class A Machinists, Class B Machinists, and Tool and Die Makers. Other machinists specialized in fixing very complicated machinery in order to minimize "down-time". In the Springfield-Chicopee-Holyoke LMA, machine operators were in large demand. Many of the larger firms have in-house training programs to train skilled machine operators to become all-around machinists. However, many companies chose to contract the making of tools and dies to specialty machine shops. In every region, individuals who were initially hired as machine operators were trained internally to handle more complicated tasks and to read blueprints. After the passage of about five years, the employees were described as machinists. A study of machinists broadened into a study of machining because of the deviation of employer definition of all-around machinists from the Occupational Outlook Handbook's definition of an all-around machinist.

This problem of definition had an impact on the study. The original intention was to interview fifty-four firms who employed machinists and which were located outside the Boston Standard Metropolitan Statistical Area where the Bureau of Labor Statistics had surveyed 736 tool and die makers and 851 maintenance machinists in August 1977. The New Bedford LMA produced a study of machine-operators in the textile and apparel industries. Of the remaining potential forty-eight firms, thirty-eight firms employed individuals who at the average wage-maximum wage stage of their career actually were performing tasks of all-around machinists. This latter sample includes 1,400 machinists.



The sample places limitations on the study of machinists. Nevertheless, the differing definitions of machinists is important in that these employers placed job orders for machinists or newspaper want-ads describing the position as machinist. It is not possible to compare the results of the survey of one labor market area to another with total consistency. Interregional comparisons of sources of recruitment and commuting patterns are possible. (Comparison between regions of average wages and maximum wages of machinist is feasible). It is felt that the information will be valuable to planners.

#### OCCUPATIONAL OUTLOOK HANDBOOK DEFINITION OF ALL-AROUND MACHINIST

(D.O.T. 600,28Q,. 281, and .381)

All-round machinists are skilled metal workers who can perform a wide variety of machining operations. They are able to set up and operate most types of machine tools used to make metal parts for cars, machines and other equipment. Machinists also know the working properties of a variety of metals including steel, cast iron, aluminum, brass, and other metals. This knowledge of metals, plus their ability to work with machine tools, enables machinists to turn a block of metal into an intricate part meeting precise specifications.

Before they begin actually making a machined product, machinists usually consult blueprints or written specifications for the item. Using these, they are able to select tools and materials for the job and plan the cutting and finishing operations. They also make standard shop computations relating to dimensions of work and machining specifications. To be sure their work is accurate, they check it using precision instruments, such as micrometers, which measure to thousandths or even millionths of an inch. After completing machining operations, they may use hand files and scrapers to smooth rough metal edges before assembling the finished parts with wrenches and screwdrivers.

Like production machinists, all-round machinists who work in plant maintenance shops have a broad knowledge of mechanical principles and machining operations. These workers are responsible for repairing parts or making new parts for machinery that has broken down.





## SOURCES OF RECRUITMENT

In the Pittsfield area, many companies recruit directly from vocational schools. Companies made efforts to identify promising students in the hope of hiring them upon graduation. In addition, there was a reluctance to hire an unemployed machinist who applied directly with the firm. The Lawrence-Haverhill SMSA had excellent experience in hiring Regional Vocational-Technical High School graduates. The Lowell LMA used a wide variety of recruitment techniques: agencies, newspaper advertising, and internal recruitment. The employers hired vocational school graduates. In addition, they discussed "pirating" among other employers. The most frequent source of actual hires was applicants who responded to newspaper want ads, followed by applicants referred by the Division of Employment Security and CETA. In an SMSA in the Southeastern Region of the State, employers discussed efforts at "pirating" from other firms. Efforts ranged from placing a recruiter in a tavern across the street from a machine shop to going through town residency lists to identify individuals listed as machinists. The employers maintained a close relationship with regional technical schools and identified future employees among students in their junior year. The Fall River LMA exemplified that the residence of employees (commuting patterns) influenced the sources of recruitment. Recruitment from agencies, schools, internal efforts, and direct application was common in this region where the majority of employed machinists worked within five miles of their residence. In this region newspaper ads were not cited as one of the two most frequent sources of hires. The Vocational-Technical Schools played a positive role in recruitment efforts. The Springfield-Chicopee-Holyoke LMA employers provide in-service training of machine operators to develop machinists. In recruitment of machine operators preference was given to direct application, followed by public employment agencies, newspaper advertising, and local trade schools in that order. In the Fitchburg LMA, internal recruitment and direct application were the most frequent sources of new hires. In the Worcester LMA, employers utilized internal recruitment most frequently, and maintained close relationships with vocational-technical schools. Direct applications were infrequently taken and were a rare source of recruitment except in the Fall River LMA, Pittsfield LMA, and the Lawrence-Haverhill SMSA.

The consistent trend was that direct applications as a source of recruitment were more commonly used in smaller labor areas in the state. Newspaper advertisements and the use of public employment agencies as a source of recruitment occurred most frequently in large urbanized areas with greater radius of commuting miles. Internal recruitment through promotions and referrals made by employees was the most frequent source of new hires.



Table I

Source of Recruitment  
Percentage of Usage by Firms Surveyed

| Source               | Percentage<br>of Firms |
|----------------------|------------------------|
| Internal Recruitment | 82%                    |
| Advertising          | 79%                    |
| Agencies and Schools | 77%                    |
| Direct Application   | 59%                    |

Each individual firm surveyed was requested to indicate its most frequent source of individuals actually hired (versus source of recruitment) and the second most frequent source of individuals hired. The combined most frequent source of hires were agencies and schools (30%) internal recruitment (30%), advertisement (25%), and direct application (15%).

Table II

Most Frequent Source of Hires

| Source               | Percentage<br>of Firms |
|----------------------|------------------------|
| Internal Recruitment | 39%                    |
| Agencies and Schools | 22%                    |
| Advertising          | 22%                    |
| Direct Application   | 17%                    |

The most frequent individual source of hires cited was newspaper advertisements (twenty-two per cent), followed by schools (eleven percent).



Table III  
Second Most Frequent Sources of Hires

| Source               | Percentage<br>of Firms |
|----------------------|------------------------|
| Agencies and Schools | 39%                    |
| Advertising          | 29%                    |
| Internal Recruitment | 18%                    |
| Direct Application   | 14%                    |

The second most frequent individual source of hires was the Division of Employment Security (thirty-two percent).

In conversation with personnel managers, it was learned that there is a seasonal pattern to sources of new hires. In the late Spring, schools are the principal focus of recruitment and source of new hires. In the late Autumn and early Winter, public employment agencies and "pirating" are sources of recruitment and new hires.

Ninety-seven percent of the firms surveyed were multi-mechanism recruiters. Eighty-nine percent of the firms employed external sources of recruitment: agencies (public and schools) and advertisements. Sixty-two percent of the firms utilized both agencies and advertisements.

Research and Development Monograph 59, U.S. Department of Labor, The Public Service and Help Wanted Ads, compared the stock of jobs on hand and the flow of listings during a month in the help wanted column to the job orders placed by employers with a local Employment Service in twelve labor areas nationwide. Significant nationwide findings included:

The employment service (ES) and the want ads have approximately the same volume of listings when viewed from the perspective of inventory, or stock, of jobs available to a job seeker on first encounter with both mechanisms.

Approximately one-third of all employers who list with E.S. are multi-mechanism users --- they also list with the want ads during a four week period.



These multi-mechanism employers generate nearly 40 percent of all the new job listings received in E.S. in a month.

Approximately 91 percent of the employers appearing in the want ads during a month do not list their jobs with E.S. in that period, whereas 67 percent of employers who list with ES do not list their jobs with the want ads.

On the average, employers who use both channels do not call E.S. until six days after their jobs appear in the want ads.

The national study found that machine trade job listings, often involving hard-to-fill, high skill occupations, moved from 10.7 percent of the stock of Employment Service listings to only 5.5 percent of the flow. Nationally, the stock of want ad listings for the machine trade occupations represented 5.9 percent of the total stock; whereas 5.7 percent of the pure flow of job listings in the want-ads was for the machine trade occupations. The rank by percentage share of total pure-flow listings in the machine trades was equivalent for both mediums (seventh out of a possible eleven).

Table IV

Ranking of First-Digit DOT Occupational Composition of Each Mechanism  
(Ranked by Percentage Share of Total)

|                           | United States      |              | Massachusetts      |  | United States |              |
|---------------------------|--------------------|--------------|--------------------|--|---------------|--------------|
|                           | Employment Service |              | Employment Service |  | Want Ads      |              |
|                           | Stock \1           | Pure Flow \2 | Stock \4           |  | Stock \1      | Pure Flow \3 |
| Professional, Tech., Mgr. | 2                  | 5            | 1                  |  | 3             | 4            |
| Clerical                  | 3                  | 2            | 2                  |  | 2             | 2            |
| Sales                     | 6                  | 6            | 8                  |  | 4             | 3            |
| Service                   | 1                  | 1            | 3                  |  | 1             | 1            |
| Farming, Forest. Fishing  | 9                  | 9            | 10                 |  | 10            | 10           |
| Processing                | 10                 | 10           | 9                  |  | 11            | 11           |
| Machine Trade             | 5                  | 7            | 7                  |  | 6             | 7            |
| Benchwork                 | 8                  | 8            | 6                  |  | 9             | 9            |
| Structural                | 4                  | 4            | 5                  |  | 5             | 5            |
| Miscellaneous             | 7                  | 3            | 4                  |  | 7             | 6            |
| Occupation Unknown        | 11                 | 11           | 11                 |  | 8             | 8            |

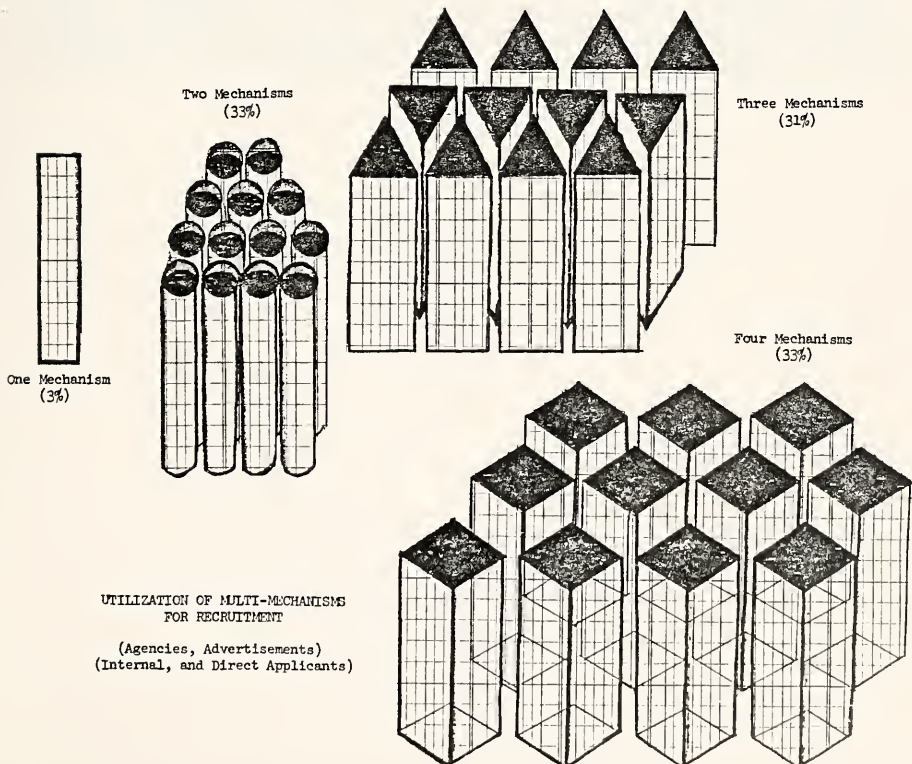
- 1/ June 1974 through May 1975  
 2/ October 1974 first working day, 4 weeks  
 3/ September 1974 last Sunday, 4 weeks  
 4/ October 1977 through March 1978





In Massachusetts, Machine Trade Job listings ranked seventh in the first quarter of calendar 1978. Nationally, mandatory listings comprise twenty-nine percent of the total machine trade jobs listed with the Employment Service. In Massachusetts in the first quarter of calendar 1978, mandatory listings comprised thirty-seven percent of total machine trade jobs listed with the Employment Service. Machining and related work job listings represented six tenths of a percent of the total Employment Service listings. Mandatory listings accounted for forty-six percent of the machining and related work vacancies listed.

It should be noted that the national survey was conducted in late 1974 and early 1975. During this time period, the United States was sliding into the economic recession. The field survey conducted in August and September 1978 suggests that in a recovering economy for a net high demand occupation, the incidence of multi-mechanism recruiting is more frequent than in the national study, particularly the simultaneous utilization of public agencies and newspaper advertisements.





#### GEOGRAPHICAL RESIDENCE AND COMMUTING PATTERNS

With the exception of the Fall River LMA and the Pittsfield LMA, the majority of machinists resided in a geographical area five miles or more from the facility where they worked. In both Fall River and Pittsfield, the size of the firm did not change the tendency of machinists to live less than five miles from where they worked. In the Lawrence-Haverhill SMSA, firms with more than two hundred employees were more likely to have machinists who resided five miles or more from their place of work than smaller firms.

The higher wages paid in the Boston SMSA attracted machinists who lived within the Lowell LMA and Brockton SMSA. There is interlabor area commuting from the Lowell LMA to the Lawrence-Haverhill SMSA. In addition, the Brockton SMSA attracts machinists who reside in the Fall River LMA.

In most parts of the state, machinists are employed in facilities five miles or more from their home. More than seventy percent of the surveyed firms' employees resided five miles or more from the plant where they worked. Machinists with private transportation who restrict themselves to working in the neighborhood where they reside are diminishing the likelihood of finding employment and the probability of career advancement.



### ENTRY REQUIREMENTS FOR MACHINISTS

The importance of educational requirements and/or experience requirements for entry differed from region to region and by source of recruitment. Education was not a critical requirement in firms which hired machine operators as their entry position and later trained the individuals as machinists in the Springfield IMA, Lowell IMA, Worcester IMA, and Pittsfield IMA. Forty-six percent of the firms indicated educational requirements were a minimum entry requirement. The Fall River IMA preferred to hire technical school graduates and train them as machinists. In practice the Lawrence-Haverhill SMSA tended to hire vocational-educational school graduates. Fifty percent of the employers who indicated that there were no minimal educational requirements for entry as machinists, typically hired individuals who had completed vocational or technical schools. A vocational-technical school background with courses in mathematics, blueprint reading, mechanical drawing, and machine shop training was preferred by many employers.

Prior experience in metal machining occupations was an important criteria in the Springfield IMA, Lowell IMA, Brockton SMSA, and the Worcester IMA. In those instances where substantial experience (3-5 years) was required, higher beginning wages were paid.

Mechanical ability, accuracy, concentration, persistence, independence, and physical effort were mentioned as traits desired of potential machinists.





### WAGES IN MACHINING

Because many firms hired machine operators as the entry occupation in the company's career ladder to machinists and because many firms defined an individual performing the tasks of machine operator as a machinist, it is difficult to make meaningful comparisons of beginning wages paid. Beginning wages with no experience ranged from a low of \$2.85 an hour to a high of \$6.00 an hour. Beginning wages with experience ranged from a low of \$3.50 an hour to a high of \$7.03 an hour.

Comparisons between Labor Market Areas on hourly average wage and hourly maximum wage tended to reflect interregional wage differences as did jobs for machinists and tool-and-die makers listed with Job Bank in August 31, 1977. At that time, it appeared that the Boston Job Bank and the Worcester Job Bank job orders paid the highest followed by Springfield Job Bank, Lawrence Job Bank, and Taunton Job Bank in that order. Table V<sub>a</sub> depicts the median and high weekly wage rates of unfilled job openings. This same trend still exists.

The hourly average wage ranged from \$4.08 an hour to \$8.00 an hour. The middle range earnings were between \$6.00 and \$6.50 an hour. The distribution of hourly average wages paid by firms surveyed follows:

| Hourly Wages     | Percent of<br>Firms Surveyed |
|------------------|------------------------------|
| \$4.00 to \$4.99 | 14                           |
| 5.00 to 5.99     | 21                           |
| 6.00 to 6.99     | 36                           |
| 7.00 to 7.99     | 18                           |
| 8.00 to 8.99     | 11                           |

A table comparing the mean hourly average wage rate by labor market area demonstrates the interregional differences.



Table V

Comparison of Mean Hourly Average Wage Rates  
By Labor Market Area

|             | Occupation of<br>Machinists |
|-------------|-----------------------------|
| Pittsfield  | \$5.58                      |
| Springfield | 6.92                        |
| Worcester   | 6.66                        |
| Fitchburg   | 6.00                        |
| Lowell      | 5.75                        |
| Lawrence    | 6.17                        |
| Fall River  | 5.25                        |

In 1976, nationally, machinists employed in Metropolitan areas had estimated hourly earnings of \$6.76. Of the ten areas surveyed in the national study in 1976, Boston ranked ninth. San Francisco-Oakland in 1976 was paying an average hourly wage rate of \$7.82 an hour. In Massachusetts, the earnings of machinists compare favorably with those of other skilled workers.

The hourly maximum wage ranged from \$5.12 an hour to \$8.65 an hour. The distribution of hourly wages paid by firms surveyed follows:



Table Va  
Comparison of Weekly Wage Rates Unfilled Job Openings  
By Job Bank Area, By Occupation  
August 31, 1977

| Selected Occupational Group | Boston Metropolitan |        |      | Springfield |        |      | Worcester |        |      | Lawrence |        |      | Taunton |        |      |     |
|-----------------------------|---------------------|--------|------|-------------|--------|------|-----------|--------|------|----------|--------|------|---------|--------|------|-----|
|                             | Low                 | Medium | High | Low         | Medium | High | Low       | Medium | High | Low      | Medium | High | Low     | Medium | High |     |
| Machineist                  | 600.280             | 120    | 200  | 315         | 120    | 170  | 240       | 120    | 180  | 269      | 92     | 200  | 240     | 92     | 168  | 300 |
| Machine Set-Up Operator     | 600.380             | -      | -    | -           | 110    | 152  | 200       | 130    | 140  | 174      | -      | -    | -       | -      | -    | -   |
| Tool and Die Maker          | 601.280             | 150    | 236  | 274         | 120    | 204  | 346       | 120    | 180  | 250      | -      | -    | -       | -      | -    | -   |
| Machine Operator            | 619.885             | 100    | 120  | 200         | -      | -    | -         | -      | -    | -        | 96     | 120  | 140     | -      | -    | -   |



| Hourly Wages     | Percent of Firms Surveyed |
|------------------|---------------------------|
| \$5.00 to \$5.99 | 10                        |
| 6.00 to 6.99     | 42                        |
| 7.00 to 7.99     | 32                        |
| 8.00 to 9.99     | 16                        |

Companies with fewer than 50 employees or greater than 250 employees tended to pay the highest maximum wages; an average of \$7.45 an hour. Some of the medium sized firms unwittingly serve as training institutions for small machine shops or large corporations.

Table VI

Comparison of Mean Hourly Maximum Wage Rates  
By Labor Market Area

|             | Occupation of Machinists |
|-------------|--------------------------|
| Pittsfield  | \$6.53                   |
| Springfield | 7.02                     |
| Worcester   | 7.28                     |
| Fitchburg   | 6.79                     |
| Lowell      | 6.99                     |
| Lawrence    | 7.00                     |
| Fall River  | 6.68                     |





Excluding the Boston SMSA, the mean average hourly wage for the State is \$6.17 an hour. The mean maximum hourly wage is \$7.00 an hour for the State excluding the Boston S.M.S.A. In August, 1977, The Bureau of Labor Statistics studied the hourly earnings of tool and die makers in the Greater Boston Area. The mean hourly earnings were \$7.08 an hour, the median hourly earnings were \$6.80 an hour; and the middle range was \$6.48 - \$7.68 an hour. The mean hourly earnings of maintenance machinists was \$6.56 an hour. Maintenance machinists earned median hourly wages of \$6.84 and middle range earnings of \$6.00 - \$6.99 an hour. The Boston SMSA continues to pay the highest hourly wages to a machinist in the State. The Occupational Outlook Handbook, 1978-1979 Edition, indicated that in 1976 average hourly wages for all-around machinists in the Boston Area were \$6.33 an hour. Statewide, entry all-around machinists can anticipate hourly wages of \$4.25-5.70 per hour.

#### Growth In Machining

In most Labor Market Areas in the State, growth in demand for machinists is apparent. This is consistent with occupational projections of annual demand 1974 - 1985 (Table VII and VIII).

Table VII

Average Annual Number of Job Openings for Machinists  
During 1974-1985 Period

| Occupation                        | Employ-<br>ment<br>1974 | Employ-<br>ment<br>1985 | Annual Labor Demand 1974-1985 |                  |                       |
|-----------------------------------|-------------------------|-------------------------|-------------------------------|------------------|-----------------------|
|                                   |                         |                         | Total<br>Demand               | Due to<br>Growth | Due to<br>Separations |
| Machinists & Apprentices          | 15,442                  | 15,978                  | 355                           | 49               | 306                   |
| Tool & Diemakers<br>& Apprentices | 6,188                   | 6,434                   | 149                           | 22               | 127                   |

SOURCE: OCCUPATION /INDUSTRY RESEARCH DEPARTMENT



The sample of firms surveyed indicated a modest growth of machinists positions statewide. The Boston SMSA is the leading area of employment for machinists. Experimental machinists are needed in some high technology firms. The growth in positions was most pronounced in the Fitchburg LMA and the Worcester LMA. Demand in Worcester has been so great that firms customarily hire seniors and even juniors for part-time and after-school work.

The number of new hires during the 1976-1978 period was in excess of new positions during the same time period. Replacement hires contributed to a stable number of machinist positions from year to year in many firms. Replacement hires appeared to result predominantly from retirement. In addition, some machinists were attracted to other firms paying higher wages. In the Lawrence-Haverhill SMSA, many employers believed that in the next ten to twenty years there will be a critical shortage of machinists. Many machinists are now middle age or older. The number of individuals eligible to retire will be increasing steadily. The employees expressed considerable concern that there will not be enough younger machinists to replace the retirees. In the Brockton SMSA, most of the firms interviewed had machinists that had been with the firm for 30, even 40 years. A machinist who had 5-6 years experience was described as "new" and an exception to the general age level of machinists. In the Springfield LMA, employers noted that many machinists had been with the company from 15-30 years. By August 1978 firms employing large numbers of machine operators in the Springfield LMA felt that conditions were leveling off in their respective industries and foresaw a period (12 to 18 months) of stabilization in employment with most new hirings for replacement purposes only.

In the Worcester LMA and the Pittsfield LMA, some employers indicated that they had invested in computerized numerically controlled tools and numerical tape machines (computerized lathes). At one firm, a numerical machine was able to produce in 6 months what normally would take three machines (six men) to produce in one year. It was believed that increased production in one component of an unfinished product would likely produce more job openings in other facets of production and make the company more competitive in the marketing of its product. The impact of numerically controlled machines would be determined by the size of the firm and receptivity of unions. Because of the high cost of the numerically controlled machines, it would be economically unfeasible for smaller firms to totally turn to such equipment. Larger firms with sufficient capital to invest in the machines will do so in the future provided that there is not union resistance to increased automation. It is likely that future machinists will need orientation to the basics of operations management and computer programming. Some companies require experienced machinists to take additional courses in mathematics and electronics so they can service and operate numerically controlled machine tools.



Table VIII  
Average Annual Number of Job Openings, For Machinists & Apprentices  
By Labor Market Area, 1974-1985

| Labor Market Area            | Total | Due to Growth | Due to Separation |
|------------------------------|-------|---------------|-------------------|
| Boston                       | 158   | 9             | 149               |
| Brockton                     | 84    | -4            | 88                |
| Fall River                   | 66    | 22            | 44                |
| Fitchburg-Leominster         | 85    | 19            | 66                |
| Lawrence-Haverhill           | 133   | -43           | 176               |
| Lowell                       | 123   | 13            | 110               |
| New Bedford                  | 77    | 11            | 66                |
| Worcester                    | 35    | 5             | 30                |
| Springfield-Chicopee-Holyoke | 46    | 8             | 38                |
| Pittsfield                   | 63    | -14           | 77                |

SOURCE: Occupation/Industry Research Department  
MASSACHUSETTS DIVISION OF EMPLOYMENT SECURITY



Most employers were enthusiastic about the occupation of machinist and optimistic concerning employment opportunities in the future. They were concerned about youth not preparing themselves to become machinists both because of future replacement needs and because they felt being a machinist was a fulfilling career. Many employers felt that vocational-technical schools were providing excellent basic training both in terms of technical skills and work attitudes.

The employers emphasized that all-around machinists have numerous opportunities for advancement. Many become supervisors. Some take additional training and become tool-and-die or instrument makers. With continuing education, skilled machinists may advance into other technical jobs in machine programming and tooling.





Table IX

Occupational Profile of Machinists  
in Manufacturing Industries in Massachusetts

Reference Date: April, May, and June 1974

Sample: 3076 firms with total employment of 362,339

| SIC Code | Industry                                  | Number of Machinists | Percent Employment In Industry |
|----------|---|----------------------|--------------------------------|
| 203      | Canned, Cured, and Frozen Foods           | 10                   | 0.24                           |
| 22       | Textile Mill Products                     | 110                  | 0.36                           |
| 222      | Broadwoven Fabric Mill                    | 20                   | 0.71                           |
| 224      | Narrow Fabrics & Other Small wares Mill   | 50                   | 3.91                           |
| 226      | Textile Finishing Except Wool             | 20                   | 0.31                           |
| 228      | Yarn and Thread Mills                     | 10                   | 0.43                           |
| 229      | Miscellaneous Textile Goods               | 30                   | 0.45                           |
| 23       | Apparel and Other Textile Products        | 50                   | 0.11                           |
| 239      | Miscellaneous Fabricated Textile Products | 30                   | 0.35                           |
| 25       | Furniture and Fixtures                    | 10                   | 0.10                           |
| 251      | Household Furniture                       | 10                   | 0.12                           |
| 26       | Paper and Allied Products                 | 240                  | 0.72                           |
| 262      | Paper Mills, Except Building Paper Mills  | 40                   | 0.50                           |
| 264      | Miscellaneous Converted Paper Products    | 120                  | 0.83                           |
| 265      | Paperboard Container and Boxes            | 50                   | 0.53                           |
| 27       | Printing and Publishing                   | 90                   | 0.21                           |
| 271      | Newspapers, Publishing and Printing       | 20                   | 0.15                           |
| 275      | Commercial Printing                       | 20                   | 0.17                           |
| 278      | Blankbooks and Bookbinding                | 30                   | 0.65                           |
| 279      | Services for the Printing Trade           | 10                   | 0.74                           |
| 28       | Chemicals and Allied Products             | 150                  | 0.78                           |
| 282      | Plastic Materials and Synthetics          | 50                   | 0.68                           |
| 284      | Soaps, Cleaners, and Toilet Goods         | 30                   | 0.86                           |
| 30       | Rubber & Miscellaneous Plastics           | 350                  | 0.98                           |
| 302      | Rubber Footwear                           | 20                   | 0.63                           |
| 307      | Miscellaneous Plastic Products            | 270                  | 1.31                           |



Table IX (continued)

Occupational Profile of Machinists  
in Manufacturing Industries in MassachusettsReference Date: April, May, and June 1974  
Sample: 3076 firms with total employment of 362,339  
(Continued)

| SIC Code | Industry                                   | Number of Machinists | Percent Employment In Industry |
|----------|--|----------------------|--------------------------------|
| 31       | Leather and Leather Products               | 90                   | 0.35                           |
| 313      | Footwear Cut Stock                         | 20                   | 0.61                           |
| 32       | Stone, Clay, Glass Products                | 110                  | 0.81                           |
| 329      | Miscellaneous Nonmetallic Mineral Products | 80                   | 0.99                           |
| 34       | Fabricated Metal Products                  | 590                  | 1.19                           |
| 342      | Cutlery, Handtools and Hardware            | 190                  | 1.23                           |
| 344      | Fabricated Structural Metal Products       | 90                   | 0.98                           |
| 345      | Screw Machine Products, Bolts etc.         | 130                  | 2.61                           |
| 346      | Metal Stampings                            | 30                   | 0.75                           |
| 348      | Miscellaneous Fabricated Wire Products     | 50                   | 2.53                           |
| 349      | Miscellaneous Fabricated Metal Products    | 40                   | 0.54                           |
| 35       | Machinery, Except Electrical               | 2,470                | 3.11                           |
| 354      | Metal Working Machinery                    | 660                  | 4.14                           |
| 355      | Special Industry Machinery                 | 510                  | 2.99                           |
| 356      | General Industry Machinery                 | 90                   | 1.03                           |
| 359      | Miscellaneous Machinery, Except Electrical | 770                  | 11.61                          |
| 362      | Electrical Industrial Apparatus            | 30                   | 1.15                           |
| 364      | Electric Lighting and Wiring Equipment     | 80                   | 0.85                           |
| 366      | Communication Equipment                    | 190                  | 0.71                           |
| 367      | Electronic Equipment and Accessories       | 620                  | 1.74                           |
| 373      | Ship and Boat Building                     | 60                   | 2.08                           |
| 38       | Instruments & Related Products             | 840                  | 2.01                           |
| 381      | Engineering and Scientific Instruments     | 60                   | 2.17                           |
| 382      | Mechanical Measuring and Control Devices   | 450                  | 4.50                           |
| 383      | Optical Instruments and Lenses             | 120                  | 3.08                           |



Table IX (continued)

Occupational Profile of Machinists  
in Manufacturing Industries in Massachusetts

Reference Date: April, May, and June 1974  
Sample: 3076 firms with total employment of 362,339  
(Continued)

| SIC<br>Code | Industry                             | Number<br>of Machinists | Percent<br>Employment<br>In Industry |
|-------------|--------------------------------------|-------------------------|--------------------------------------|
| 385         | Ophthalmic Goods                     | 50                      | 0.75                                 |
| 386         | Photographic Equipment and Supplies  | 140                     | 1.10                                 |
| 391         | Jewelry, Silverware, and Plated Ware | 40                      | 0.49                                 |
| 396         | Costume Jewelry and Notions          | 220                     | 6.32                                 |

Source: An Occupational Profile of Manufacturing Industries in Massachusetts  
1974 Report Number 4.

Occupation/Industry Research Department April 1, 1976.



## Machinists: Sources of Supply in Massachusetts

This section briefly describes the primary sources of supply which exists for machinists in Massachusetts. These include vocational schools, the WIN program, apprentice training, CETA, employment service applicants, and the insured unemployed.

### Vocational School Survey

Twenty-two vocational educational schools were surveyed across the state representing all major labor market areas excluding the Boston SMSA. School representatives were asked to address a variety of questions, which appear in Table X. The highlights of the findings are outlined below:

- (1) The total number of all graduates among the surveyed schools except one, the Springfield Skills Center, will decline very slightly over the next two years. The skills center is planning to train, pending funding, 256 machine operators in 1979 and 304 in 1980.

### Graduates

|                      | Vocational |               |       |
|----------------------|------------|---------------|-------|
| Year                 | Schools    | Skills Center | Total |
| 1978                 | 464+       | 186=          | 650   |
| 1979                 | 438+       | 256=          | 694   |
| 1980                 | 448+       | 304=          | 752   |
| Percent Change 78/80 | -3%        | 63%           | +16%  |

- (2) A high percentage of graduates remain in the machinist trade, according to follow-up studies by the schools.





- (3) A high percentage of graduates remain working within their labor market area. Mobility outside the Labor Market Area is limited.
- (4) Slightly more than half of the responding schools were equipped or funded to train more students. The remaining were at capacity or unable to do so for a variety of reasons (funding, space, etc.)
- (5) Many students work in the skills they are studying between their junior and senior year, or participate in cooperative work or part-time employment. This contributes significantly to the large numbers who find employment directly out of high school or shortly thereafter.

For interregional differences, reference should be made to the appropriate labor area supply and demand reviews. Details on programs and curricula are available for the following labor market areas: Brockton, Fall River, Fitchburg-Leominster, Lawrence-Haverhill, Lowell, New Bedford, Pittsfield, Springfield-Chicopee-Holyoke, and Worcester.



Table X  
Occupational Supply Source Survey  
Machinist

|  | Brockton LMA       |                    | Pittsfield LMA |        | Fall River |              | Law.-Haverhill LMA |              | Lowell LMA      |             | Worcester LMA |          |
|--|--------------------|--------------------|----------------|--------|------------|--------------|--------------------|--------------|-----------------|-------------|---------------|----------|
|  | S. E. Reg. Voc. T. | Brockton High Sch. | Taconic Voc.   | McCann | Dinan      | G. L. RVTIES | Rashoba            | Shawsheen T. | G. Law. Reg. T. | Black-stone | Worc.         | Bay Path |
| Total Graduates in June 1978   | 19                 | 7                  | 26             | 10     | 43         | 24           | 24                 | 23           | NA              | 34          | 87            | 80       |
| Estimated Graduates in June 1979   | 15                 | 7                  | 23             | 8      | 43         | NA           | 26                 | 23           | NA              | 35          | 75            | 80       |
| Estimated Graduates in June 1980   | 15                 | 7                  | 21             | 4      | 43         | NA           | 26                 | 23           | NA              | 36          | 75            | 80       |
| Estimate of Number or Percent of Graduates Who Remain in Their Trade                               | 50-75%             | 75%                | 70%            | 80-85% | 74%        | 85%          | 92%                | Approx. 90%  | 85%             | 80%         | 46%           | Ap. 80%  |
| Estimate of Number or Percent of Grads. Who Remain in LMA  | NA                 | 100%               | 70%            | 75%    | 70%        | 90%          | 100%               | Approx. 90%  | 85%             | 50%         | 80%           | Ap. 80%  |
| Funded-Equipped to Train More Students   | Yes                | No                 | No             | No     | Yes        | No           | Yes                | -            | Yes             | NA          | No            | Yes      |
| Percent Who Obtain Summer Employment Between Junior-Senior Year                                    | NA                 | 50-60%             | 25-30%         | 40%    | 15%        | NA           | NA                 | 25 %         | High            | 60%         | 20%           | NA       |
| Percent Who Participate in Cooperative Work or Part-time Employment in the Skill They Are Studying | NA                 | 50%                | 50%            | 20%    | 60%        | NA           | 100%               | 25%          | 100%            | 40%         | 20%           | NA       |



Table X (continued)  
Occupational Supply Source Survey  
Machinist

|  | Mont.<br>Reg. Voc. | Fitch. - Leo. |         | Springfield-Chicopee |           |             | Pitts-<br>field<br>Frank.<br>County | New Bedford |                             |
|--|--------------------|---------------|---------|----------------------|-----------|-------------|-------------------------------------|-------------|-----------------------------|
|  |                    | Leo. - Trade  | Hampden | Roger Putnam         | Westfield | Chicopee C. |                                     | Apponequet  | Old<br>Colony<br>Great N.B. |
| Total Graduates in<br>June 1978  | 9                  | 14            | 186     | 21                   | 17        | 11          | 10                                  | 5           | 8 25                        |
| Estimated Graduates<br>in June 1979  | NA                 | 15            | 256     | 20                   | 15        | 8           | 14                                  | 3           | 9 19                        |
| Estimated Graduates<br>in June 1980  | NA                 | NA            | 304     | 36                   | 17        | 28          | 11                                  | 4           | 11 32                       |
| Estimate of Number or<br>Percent of Graduates Who<br>Remain in Their Trade                                   | 90%                | NA            | 95%     | 80%                  | 84%       | 95%         | 60%                                 | 60%         | 45% 78%                     |
| Estimate of Number or<br>Percent of Grads. Who<br>Remain in IAA  | NA                 | NA            | 90%     | NA                   | 100%      | 90%         | 70%                                 | 20%         | 62% 100%                    |
| Funded-Equipped to Train<br>More Students  | NA                 | NA            | Yes     | No                   | No        | yes         | No                                  | Yes         | NA NA                       |
| Percent Who Obtain Summer<br>Employment Between Junior<br>Senior Year  | NA                 | NA            | NA      | NA                   | 50%       | 75%         | 100%                                | 100%        | 0 0                         |
| Percent Who Participate in<br>Cooperative Work or Part-<br>time Employment in the<br>Skill They are Studying | NA                 | 50%           | NA      | 80%                  | 80%       | 95%         | 100%                                | 66%         | 66% 50%                     |



TABLE XI  
State Funded Programs in Machine Shops  
By Labor Market Area

| Labor Market Area | Graduates     |  | School       | City or Town |
|-------------------|---------------|--|--------------|--------------|
|                   | Class of 1978 |  |              |              |
| Boston SMSA       | 10            | Arlington Senior High School                   | Arlington    |              |
|                   | 11            | Claude H. Patten Trade High School             | Beverly      |              |
|                   | 10            | Blue Hill Regional Vocation Tech. High Sch.    | Canton       |              |
|                   | 9             | Boston Trade High School                       | Boston       |              |
|                   | 32            | Boston Industrial Cooperative Programs         | Boston       |              |
|                   | 6             | Everett Vocational High School                 | Everett      |              |
|                   | 36            | Lynn Vocational Technical Institute            | Lynn         |              |
|                   | 5             | Medford Vocational Technical High School       | Medford      |              |
|                   | 12            | Minutemen Regional Vocational Tech. High Sch.  | Lexington    |              |
|                   | 5             | Newton-North Sch.-Tech. Voc. Dept.             | Newton       |              |
|                   | 2             | North Shore Regional Voc. School District      | Beverly      |              |
|                   | 20            | Northeast Met. Regional Voc. School District   | Wakefield    |              |
|                   | 9             | Peabody Voc. High School                       | Peabody      |              |
|                   | 9             | Quincy Vocational - Technical School           | Quincy       |              |
|                   | 2             | Salem Vocational High School                   | Salem        |              |
|                   | 5             | Somerville Technical Trade High School         | Somerville   |              |
| Brockton          | 13            | South Middlesex Regional Voc. Tech. Sch. Dist. |              |              |
|                   | 9             | South Shore Vocational - Tech. High School     |              |              |
|                   | -             | Tri-County Reg. Voc. Tech. School District     |              |              |
|                   | 11            | Waltham Vocational High School                 | Hanover      |              |
|                   | 19            | Southeastern Reg. Voc. Tech. School            | Franklin     |              |
|                   | 7             | Brockton High School                           | Waltham      |              |
|                   | 43            | Diman Regional Voc. Tech. High School          | South Easton |              |
|                   | 14            | Leominster Trade High School                   | Brockton     |              |
|                   | 9             | Mantachusett Regional Voc. Tech. Sch. Div.     | Fall River   |              |
|                   | 10            | Gloucester Vocational School                   | Leominster   |              |
| Gloucester        |               |  | Fitchburg    |              |
|                   |               |  | Gloucester   |              |





Table XI(Continued Page )  
State Funded Programs in Machine Shops  
By Labor Market Area

| Labor Market Area   | Graduates<br>Class of 1978 | School                                      | City or Town |
|---|----------------------------|---|--------------|
| Lawrence-Haverhill  | 24                         | Greater Lawrence Regional Voc. T. H. Sch.   | Andover      |
|   | 18                         | Whittier Regional Vocational Tech. H. Sch.  | Haverhill    |
| Lowell  | 23                         | Greater Lowell Regional Voc. Tech. H. Sch.  | Tyngsborough |
|   | 24                         | Nashoba Valley Regional Voc. Tech. H. Sch.  | Westford     |
|   | 23                         | Shawheen Valley Regional Voc. High School   | Billerica    |
| New Bedford   | 5                          | Apponequet Regional Vocational High School  | Lakeville    |
|   | 25                         | Greater New Bedford Reg. Voc. Tech. H. Sch. | New Bedford  |
|   | 8                          | Old Colony Regional Voc. Tech. High School  | Rochester    |
| Pittsfield  | 10                         | Franklin County Technical School            | Turner Falls |
|   | 26                         | Taconnic Vocational High School             | Pittsfield   |
|   | 10                         | Charles McCann Regional Vocational Tech.    | Williamstown |
| Providence -<br>Pawtucket R.I.<br>SMSA Massachusetts<br>Portion | 5                          | Attleboro Vocational Tech. High School      | Attleboro    |
|   | 6                          | Dighton Rehoboth Regional Vocation H. Sch.  | Rehoboth     |
| Springfield   | 11                         | Chicopee Comprehensive High School          |              |
|   | 7                          | William J. Dean Voc. Tech. High School      |              |
|   | 13                         | Pathfinder Regional Voc. Tech. High School  |              |
|   | 21                         | Putnam Vocational Technical High School     |              |
|   | 11                         | Smith's Agricultural Vocational H. Sch.     |              |
|   | 17                         | Westfield Vocational High School            |              |
|   | 186                        | (Hampden District Regional Skill Center)    |              |
| Taunton   | 6                          | Bristol-Plymouth Regional Voc. Tech. Sch.   | Springfield  |
| Worcester   | 80                         | Bay Path Regional Voc. High School          | Northampton  |
|   | 34                         | Worcester Voc. Tech. High School            | Westfield    |
|   | 87                         | Blackstone Voc. Regional Tech. H. School    | Taunton      |
|   |                            |   | Charlton     |
|   |                            |   | Worcester    |
|   |                            |   | Upton        |

Source: 1/ Division of Occupational Education  
State Department of Education  
Commonwealth of Massachusetts

2/ Information on Graduates was obtained through a telephone survey.



### Work Incentive Program (WIN)

Win had 68 ongoing on-the-job training contracts in metal trades as of November 1, 1978. These contracts were for machinists, metal machinists, and machine operators.

WIN-The Work Incentive Program - helps individuals who receive Aid to Families with Dependent Children (AFDC) move from welfare to economic independence. OJT is on-the-job training given by an employer to a WIN recipient. Under WIN/OJT, the employer can be reimbursed for the costs of training new employees from the WIN Program and is eligible for Federal tax incentives.

### Apprentice Training

The Apprentice Training Division of the Department of Labor and Industries approves all formal apprentice programs and certifies standard of apprenticeship in Massachusetts. It is charged with developing and serving all programs and handling complaints registered by participants in or applicants for approved programs.

### October Status of Apprentices

|                | <u>Machinist</u> | <u>Tool &amp; Die</u> |
|----------------|------------------|-----------------------|
| Firms Involved | 303              | NA                    |
| Individuals    | 516              | 165                   |
| White          | 475              | 159                   |
| Minority Group | 41               | 6                     |
| Male           | 497              | 164                   |
| Female         | 19               | 1                     |
| Veterans       |                  |                       |
| Viet-Nam       | 218              | 59                    |
| Other          | 298              | NA                    |

Source: Division of Apprentice Training



### CETA

The Massachusetts Balance of State CETA has developed a \$5 million STIP (Skills Training Improvement Program) program to train and place 403 individuals including 36 machinists. Other training programs are made available through the CETA prime sponsors. In fiscal year 1979, the Boston prime sponsor will offer machine tool and marine machinist training program at the E.D.I.C. and O.I.C. facilities. The Gardner CETA consortium has also been conducting a machine occupation classroom training program under Title I. The Springfield CETA has a machine operator training program.

### ESARS

The State's ESARS (Employment Services Automated Reporting System) can be used as another indicator of the availability of certain machine occupations. ESARS tables exist for both the state and the local office levels. The table of significance in ESARS is Table 96. This table lists the occupations of all registered applicants with the Employment Service. For example as shown on the accompanying page Massachusetts' March 31, 1978 ESARS Table 96 lists 1,035 instrument makers (600.280) and 147 tool and die makers (601.281) registered with D.E.S.



## MACHINE TRADES OCCUPATIONS

- 60 Metal machining occupations
- 600 Machinists and related occupations
- 601 Toolmakers and related occupations
- 602 Gear machining occupations
- 603 Abrading occupations
- 604 Turning occupations
- 605 Milling, shaping, and planing occupations
- 606 Boring occupations
- 607 Sawing occupations
- 609 Metal machining occupations, n.e.c.
- 61 Metalworking occupations, n.e.c.
- 610 Hammer forging occupations
- 611 Press forging occupations
- 612 Forging occupations, n.e.c.
- 613 Sheet and bar rolling occupations
- 614 Extruding and drawing occupations
- 615 Punching and shearing occupations
- 616 Fabricating machine occupations
- 617 Forming occupations, n.e.c.
- 619 Miscellaneous metalworking occupations, n.e.c.
- 62/63 Mechanics and machinery repairers
- 620 Motorized vehicle and engineering equipment mechanics and repairers
- 621 Aircraft mechanics and repairers
- 622 Rail equipment mechanics and repairers
- 623 Marine mechanics and repairers
- 624 Farm mechanics and repairers
- 625 Engine, power transmission, and related mechanics
- 626 Metalworking machinery mechanics
- 627 Printing and publishing mechanics and repairers
- 628 Textile machinery and equipment mechanics and repairers
- 629 Special industry machinery mechanics
- 630 General industry mechanics and repairers
- 631 Powerplant mechanics and repairers
- 632 Ordnance and accessories mechanics and repairers
- 633 Business and commercial machine repairers
- 637 Utilities service mechanics and repairers
- 638 Miscellaneous occupations in machine installation and repair
- 639 Mechanics and machinery repairers, n.e.c.
- 64 Paperworking occupations
- 640 Paper cutting, winding, and related occupations
- 641 Folding, creasing, scoring, and gluing occupations
- 649 Paperworking occupations, n.e.c.
- 65 Printing occupations
- 650 Typesetters and composers
- 651 Printing press occupations
- 652 Printing machine occupations
- 653 Bookbinding-machine operators and related occupations
- 654 Typecasters and related occupations
- 659 Printing occupations, n.e.c.
- 66 Wood machining occupations
- 660 Cabinetmakers
- 661 Patternmakers
- 662 Sanding occupations
- 663 Shearing and shaving occupations
- 664 Turning occupations
- 665 Milling and planing occupations
- 666 Boring occupations
- 667 Sawing occupations
- 669 Wood machining occupations, n.e.c.
- 67 Occupations in machining stone, clay, glass, and related materials
- 670 Stonecutters and related occupations
- 673 Abrading occupations
- 674 Turning occupations
- 675 Planing and shaping occupations, n.e.c.
- 676 Boring and punching occupations
- 677 Chipping, cutting, sawing, and related occupations
- 679 Occupations in machining stone, clay, glass, and related materials, n.e.c.
- 68 Textile occupations
- 680 Carding, combing, drawing, and related occupations
- 681 Twisting, beaming, warping, and related occupations
- 682 Spinning occupations
- 683 Weavers and related occupations
- 684 Hosiery knitting occupations
- 685 Knitting occupations, except hosiery
- 686 Punching, cutting, forming, and related occupations
- 687 Tufting occupations
- 689 Textile occupations, n.e.c.
- 69 Machine trades occupations, n.e.c.
- 690 Plastics, synthetics, rubber, and leather working occupations
- 691 Occupations in fabrication of insulated wire and cable
- 692 Occupations in fabrication of products from assorted materials
- 693 Modelmakers, patternmakers, and related occupations
- 694 Occupations in fabrication of ordnance, ammunition, and related products, n.e.c.
- 699 Miscellaneous machine trades occupations, n.e.c.





Table XII

| 03/31/78 MASSACHUSETTS                                    |                   |                                 |             |        |         |            |          |                            |       |           |                  |                  |       |          | STATE MASSACHUSETTS                                       |                 |     |  |  |  |  |  |  |  |  |  |  |  |  | TABLE   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|---|-------------------|---------------------------------|-------------|--------|---------|------------|----------|----------------------------|-------|-----------|------------------|------------------|-------|----------|---|-----------------|-----|--|--|--|--|--|--|--|--|--|--|--|--|---|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| APPLICANTS AND NONAGRICULTURAL JOB OPENINGS BY OCCUPATION |                   |                                 |             |        |         |            |          |                            |       |           |                  |                  |       |          | APPLICANTS AND NONAGRICULTURAL JOB OPENINGS BY OCCUPATION |                 |     |  |  |  |  |  |  |  |  |  |  |  |  | APPLICANTS AND NONAGRICULTURAL JOB OPENINGS BY OCCUPATION |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| ITEM NO.  | OCCUPATIONAL CODE | TOTAL REQUISITED APPS AVAILABLE | ACTIVE FILE |        |         |            |          | NONAGRICULTURAL OPENINGS   |       |           |                  |                  | TOTAL | UNFILLED | OPEN  | 30 DAYS OR MORE |     |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|   |                   |                                 | TOTAL       | FEMALE | VETERAN | AGE GROUPS | MINORITY | ECONOMICALLY DISADVANTAGED | TOTAL | MANDATORY | OPENING RECEIVED | OPENING RECEIVED |       |          |   |                 |     |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|   |                   |                                 |             |        |         |            |          |                            |       |           |                  |                  |       |          |   |                 |     |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| A   | 575               | 84                              | 53          | 7      | E       | D          |          |                            |       |           |                  |                  |       |          |   |                 |     |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 96  | 579               | 137                             | 100         | 11     | 579     | 11         | 20       | 25                         | 11    | 6         | 24               | 7                | 2     | 7        | 4   | 0               | 3   |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 96  | 580               | 30                              | 29          | 6      | 580     | 6          | 0        | 0                          | 10    | 4         | 44               | 27               | 2     | 20       | 6   | 6               | 6   |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 96  | 581               | 22                              | 13          | 2      | 581     | 2          | 2        | 2                          | 4     | 2         | 6                | 12               | 0     | 1        | 1   | 2               | 2   |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 96  | 582               | 177                             | 112         | 9      | 582     | 9          | 33       | 6                          | 43    | 18        | 32               | 148              | 106   | 44       | 1   | 1               | 42  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 96  | 583               | 63                              | 46          | 20     | 583     | 20         | 10       | 4                          | 12    | 10        | 17               | 14               | 16    | 14       | 9   | 14              | 29  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 96  | 584               | 64                              | 44          | 16     | 584     | 16         | 10       | 4                          | 14    | 0         | 20               | 36               | 19    | 21       | 21  | 20              | 20  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 96  | 585               | 74                              | 39          | 11     | 585     | 11         | 5        | 6                          | 8     | 7         | 15               | 13               | 2     | 6        | 0   | 7               | 7   |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 96  | 586               | 20                              | 14          | 2      | 586     | 2          | 5        | 1                          | 2     | 3         | 10               | 19               | 7     | 18       | 1   | 0               | 0   |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 96  | 587               | 13                              | 8           | 1      | 587     | 1          | 3        | 1                          | 2     | 1         | 2                | 0                | 0     | 0        | 0   | 0               | 0   |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 96  | 589               | 471                             | 284         | 105    | 589     | 105        | 63       | 61                         | 69    | 66        | 144              | 156              | 13    | 98       | 40  | 26              | 26  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 96  | 589.005           | 61                              | 37          | 16     | 589.005 | 16         | 6        | 6                          | 16    | 6         | 20               | 14               | 2     | 6        | 4   | 4               | 4   |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 96  | 590               | 59                              | 40          | 12     | 590     | 12         | 9        | 11                         | 6     | 7         | 21               | 31               | 6     | 24       | 13  | 9               | 9   |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 96  | 599               | 163                             | 86          | 16     | 599     | 16         | 21       | 15                         | 24    | 17        | 33               | 44               | 18    | 28       | 18  | 18              | 9   |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 96  | 600               | 789                             | 32          | 275    | 600     | 32         | 275      | 103                        | 190   | 79        | 263              | 678              | 265   | 297      | 307   | 243             | 243 |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 96  | 600.200           | 1209                            | 637         | 19     | 600.200 | 19         | 231      | 83                         | 149   | 65        | 195              | 449              | 211   | 222      | 256   | 304             | 304 |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 96  | 600.300           | 1035                            | 104         | 111    | 600.300 | 111        | 9        | 28                         | 23    | 20        | 44               | 105              | 45    | 59       | 42  | 42              | 42  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 96  | 600.004           | 1                               | 0           | 0      | 600.004 | 0          | 0        | 0                          | 0     | 0         | 0                | 0                | 0     | 0        | 0   | 0               | 0   |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 96  | 601               | 221                             | 131         | 6      | 601     | 6          | 66       | 11                         | 60    | 7         | 39               | 109              | 61    | 47       | 106   | 90              | 90  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 96  | 601.200           | 147                             | 89          | 1      | 601.200 | 1          | 40       | 7                          | 37    | 2         | 23               | 81               | 49    | 38       | 86  | 71              | 71  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 96  | 602               | 13                              | 6           | 2      | 602     | 2          | 2        | 1                          | 2     | 2         | 3                | 8                | 7     | 2        | 7   | 7               | 7   |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 96  | 602.005           | 5                               | 6           | 4      | 602.005 | 4          | 0        | 1                          | 2     | 0         | 1                | 1                | 1     | 1        | 0   | 0               | 0   |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 96  | 603               | 249                             | 155         | 11     | 603     | 11         | 48       | 16                         | 36    | 31        | 74               | 97               | 67    | 33       | 77  | 46              | 46  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 96  | 603.200           | 63                              | 37          | 5      | 603.200 | 5          | 17       | 1                          | 11    | 9         | 16               | 32               | 35    | 11       | 27  | 19              | 19  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 96  | 603.702           | 102                             | 65          | 4      | 603.702 | 4          | 12       | 6                          | 9     | 11        | 32               | 49               | 32    | 11       | 45  | 24              | 24  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 96  | 603.005           | 65                              | 39          | 2      | 603.005 | 2          | 14       | 7                          | 12    | 10        | 22               | 16               | 9     | 10       | 5   | 3               | 3   |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 96  | 603.006           | 1                               | 1           | 0      | 603.006 | 1          | 0        | 1                          | 0     | 0         | 1                | 0                | 0     | 0        | 0   | 0               | 0   |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 96  | 604               | 303                             | 181         | 12     | 604     | 12         | 51       | 23                         | 33    | 31        | 80               | 168              | 96    | 66       | 148   | 118             | 118 |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 96  | 604.200           | 30                              | 18          | 0      | 604.200 | 0          | 7        | 2                          | 2     | 2         | 5                | 27               | 18    | 8        | 20  | 18              | 18  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 96  | 604.300           | 97                              | 67          | 1      | 604.300 | 1          | 22       | 5                          | 9     | 9         | 33               | 60               | 36    | 13       | 52  | 45              | 45  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 96  | 604.005           | 122                             | 75          | 7      | 604.005 | 7          | 17       | 14                         | 16    | 15        | 26               | 66               | 28    | 37       | 40  | 30              | 30  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 96  | 604.006           | 4                               | 1           | 0      | 604.006 | 0          | 0        | 0                          | 0     | 0         | 1                | 0                | 0     | 0        | 0   | 0               | 0   |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 96  | 605               | 226                             | 143         | 19     | 605     | 19         | 39       | 16                         | 34    | 23        | 66               | 106              | 74    | 30       | 68  | 48              | 48  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 96  | 605.702           | 80                              | 50          | 7      | 605.702 | 7          | 15       | 6                          | 8     | 6         | 21               | 44               | 33    | 10       | 32  | 29              | 29  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 96  | 605.005           | 109                             | 65          | 10     | 605.005 | 10         | 18       | 6                          | 19    | 14        | 25               | 44               | 28    | 17       | 27  | 17              | 17  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 96  | 606               | 285                             | 181         | 35     | 606     | 35         | 41       | 26                         | 25    | 41        | 73               | 115              | 73    | 49       | 74  | 52              | 52  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 96  | 606.702           | 202                             | 133         | 26     | 606.702 | 26         | 26       | 20                         | 21    | 33        | 54               | 66               | 40    | 30       | 47  | 31              | 31  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 96  | 606.005           | 17                              | 9           | 3      | 606.005 | 3          | 1        | 2                          | 0     | 2         | 3                | 3                | 1     | 1        | 2   | 2               | 2   |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 96  | 607               | 31                              | 19          | 0      | 607     | 0          | 9        | 3                          | 4     | 4         | 9                | 230              | 6     | 6        | 215   | 213             | 213 |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 96  | 609               | 1370                            | 690         | 270    | 609     | 270        | 167      | 131                        | 152   | 245       | 397              | 418              | 209   | 207      | 155   | 155             | 155 |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 96  | 609.000           | 16                              | 10          | 0      | 609.000 | 0          | 4        | 0                          | 2     | 1         | 4                | 17               | 9     | 6        | 16  | 14              | 14  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 96  | 609.004           | 66                              | 44          | 16     | 609.004 | 16         | 7        | 9                          | 10    | 12        | 24               | 17               | 5     | 12       | 5   | 6               | 6   |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 96  | 609.005           | 927                             | 602         | 145    | 609.005 | 145        | 97       | 92                         | 73    | 208       | 286              | 265              | 109   | 190      | 115   | 84              | 84  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 96  | 610               | 35                              | 23          | 2      | 610     | 2          | 9        | 3                          | 6     | 1         | 14               | 12               | 9     | 6        | 6   | 1               | 1   |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| MASSACHUSETTS 25  |                   |                                 |             |        |         |            |          |                            |       |           |                  |                  |       |          |   |                 |     |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| FOR PERIOD ENDING 03/31/70                                |                   |                                 |             |        |         |            |          |                            |       |           |                  |                  |       |          |   |                 |     |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| REPORT NO MAS-62  |                   |                                 |             |        |         |            |          |                            |       |           |                  |                  |       |          |   |                 |     |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |



Table XII (continued)

TABLE  
APPLICANTS AND NONAGRICULTURAL JOB OPENINGS BY OCCUPATION

TABLE

STATE MASSACHUSETTS

03/31/78

MASSACHUSETTS

BY OCCUPATION

| ITEM<br>NO. | OCCUPATIONAL CODE | TOTAL<br>REGIS-<br>TERED<br>APPS | TOTAL<br>FEMALE | VETERAN | ACTIVE FILE | AGE GROUPS  | MINOR-<br>ITY   | ECONOM-<br>ICALLY<br>DISAD-<br>VANT-<br>AGEO | J   | K   | L   | M   | N   | O   |
|-------------|-------------------|----------------------------------|-----------------|---------|-------------|-------------|-----------------|--|-----|-----|-----|-----|-----|-----|
|             |                   |                                  |                 |         |             | UNDER<br>22 | 45 AND<br>OLDER |  |     |     |     |     |     |     |
| A           | 611               | 23                               | 18              | 3       | 4           | 0           | 1               | 6  | 11  | 2   | 2   | 0   | 2   | 0   |
| 96          | 612               | 36                               | 10              | 2       | 10          | 0           | 5               | 2  | 5   | 8   | 4   | 4   | 4   | 4   |
| 96          | 613               | 21                               | 13              | 1       | 2           | 2           | 7               | 10   | 5   | 7   | 3   | 4   | 4   | 4   |
| 96          | 614               | 77                               | 51              | 3       | 14          | 5           | 7               | 20   | 16  | 16  | 9   | 10  | 6   | 6   |
| 96          | 615               | 299                              | 186             | 39      | 46          | 21          | 42              | 41   | 90  | 81  | 34  | 46  | 66  | 66  |
| 96          | 616               | 269                              | 166             | 36      | 41          | 19          | 36              | 38   | 82  | 76  | 33  | 44  | 56  | 56  |
| 96          | 617               | 900                              | 609             | 176     | 104         | 101         | 91              | 168  | 274 | 430 | 237 | 246 | 176 | 176 |
| 96          | 618               | 3                                | 3               | 0       | 0           | 1           | 0               | 1  | 0   | 1   | 1   | 0   | 1   | 1   |
| 96          | 619               | 263                              | 163             | 41      | 34          | 17          | 30              | 41   | 73  | 89  | 45  | 39  | 47  | 47  |
| 96          | 620               | 142                              | 87              | 33      | 11          | 9           | 10              | 32   | 51  | 40  | 18  | 21  | 24  | 24  |
| 96          | 621               | 1269                             | 871             | 274     | 167         | 135         | 144             | 210  | 395 | 407 | 270 | 276 | 146 | 146 |
| 96          | 622               | 2                                | 0               | 0       | 0           | 0           | 0               | 0  | 0   | 1   | 1   | 1   | 0   | 0   |
| 96          | 623               | 873                              | 609             | 195     | 117         | 88          | 94              | 163  | 285 | 292 | 192 | 192 | 106 | 106 |
| 96          | 624               | 3492                             | 2261            | 29      | 761         | 532         | 217             | 232  | 789 | 771 | 98  | 422 | 347 | 347 |
| 96          | 625               | 2446                             | 1604            | 16      | 663         | 312         | 177             | 164  | 844 | 669 | 70  | 309 | 267 | 267 |
| 96          | 626               | 472                              | 312             | 5       | 101         | 74          | 19              | 26   | 116 | 95  | 17  | 69  | 32  | 32  |
| 96          | 627               | 432                              | 276             | 6       | 65          | 132         | 7               | 33   | 108 | 98  | 9   | 49  | 40  | 40  |
| 96          | 628               | 312                              | 202             | 6       | 170         | 33          | 20              | 12   | 42  | 6   | 3   | 1   | 6   | 6   |
| 96          | 629               | 243                              | 164             | 5       | 132         | 29          | 14              | 8  | 31  | 4   | 3   | 0   | 4   | 4   |
| 96          | 630               | 8                                | 4               | 1       | 4           | 2           | 0               | 0  | 1   | 4   | 0   | 0   | 0   | 0   |
| 96          | 631               | 9                                | 7               | 0       | 3           | 0           | 3               | 2  | 0   | 2   | 0   | 1   | 1   | 1   |
| 96          | 632               | 101                              | 71              | 0       | 42          | 16          | 17              | 1  | 21  | 64  | 55  | 8   | 59  | 59  |
| 96          | 633               | 92                               | 62              | 0       | 36          | 13          | 7               | 1  | 17  | 59  | 51  | 4   | 67  | 67  |
| 96          | 634               | 6                                | 2               | 0       | 0           | 1           | 0               | 0  | 2   | 0   | 0   | 0   | 0   | 0   |
| 96          | 635               | 2                                | 0               | 0       | 3           | 1           | 1               | 0  | 2   | 4   | 4   | 4   | 0   | 0   |
| 96          | 636               | 236                              | 153             | 2       | 100         | 42          | 13              | 6  | 49  | 62  | 8   | 32  | 25  | 25  |
| 96          | 637               | 218                              | 140             | 1       | 94          | 37          | 12              | 6  | 46  | 49  | 7   | 31  | 23  | 23  |
| 96          | 638               | 78                               | 63              | 0       | 32          | 8           | 12              | 2  | 12  | 28  | 22  | 7   | 17  | 17  |
| 96          | 639               | 10                               | 7               | 0       | 2           | 1           | 3               | 1  | 3   | 0   | 0   | 0   | 0   | 0   |
| 96          | 640               | 15                               | 10              | 4       | 2           | 0           | 6               | 1  | 4   | 3   | 0   | 2   | 2   | 2   |
| 96          | 641               | 11                               | 7               | 0       | 3           | 0           | 1               | 2  | 4   | 3   | 0   | 1   | 2   | 2   |
| 96          | 642               | 66                               | 46              | 6       | 22          | 7           | 8               | 4  | 16  | 21  | 7   | 11  | 8   | 8   |
| 96          | 643               | 5                                | 4               | 0       | 3           | 0           | 1               | 0  | 1   | 2   | 1   | 1   | 3   | 3   |
| 96          | 644               | 51                               | 42              | 4       | 30          | 5           | 7               | 1  | 10  | 4   | 3   | 3   | 2   | 2   |
| 96          | 645               | 49                               | 28              | 2       | 13          | 1           | 6               | 3  | 7   | 31  | 9   | 16  | 11  | 11  |
| 96          | 646               | 276                              | 175             | 2       | 86          | 29          | 26              | 12   | 59  | 29  | 9   | 14  | 11  | 11  |
| 96          | 647               | 190                              | 127             | 1       | 66          | 17          | 18              | 6  | 38  | 27  | 10  | 16  | 13  | 13  |
| 96          | 648               | 32                               | 23              | 0       | 9           | 6           | 2               | 3  | 7   | 0   | 0   | 0   | 1   | 1   |
| 96          | 649               | 27                               | 14              | 0       | 7           | 5           | 1               | 2  | 9   | 1   | 0   | 0   | 1   | 1   |
| 96          | 650               | 617                              | 386             | 4       | 166         | 36          | 48              | 29   | 115 | 202 | 102 | 95  | 115 | 115 |
| 96          | 651               | 500                              | 318             | 4       | 135         | 25          | 70              | 21   | 97  | 166 | 89  | 70  | 96  | 96  |
| 96          | 652               | 0                                | 0               | 0       | 0           | 0           | 0               | 0  | 0   | 0   | 0   | 0   | 0   | 0   |

QUARTERLY YEAR TO DATE  
FOR PERIOD ENDING 03/31/78

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Table XII (continued)

APPLICANTS AND NONAGRICULTURAL JOB OPENINGS BY OCCUPATION

| ITEM NO. | OCCUPATIONAL CODE | ACTIVE FILE     |              |         |   |   |   |   |            |          |                            | NONAGRICULTURAL OPENINGS |                   |          |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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|          |                   | TOTAL REGISTERS | TOTAL FEMALE | VETERAN | F | E | D | C | AGE GROUPS | MINORITY | ECONOMICALLY DISADVANTAGED | TOTAL RECEIVED           | MANDATORY OPENING | UNFILLED | OPENING |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|          |                   |                 |              |         |   |   |   |   |            |          |                            |                          |                   |          |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

MASSACHUSETTS 25  
REPORT NO MA5-62

QUARTERLY YEAR TO DATE

FOR PERIOD ENDING 03/31/78





## Occupational Characteristics of the Insured Unemployed

Another listing of the available supply of machine occupations is the Divisions's report, Occupational Characteristics of the Insured Unemployed. The January-June report indicates that there were 466 individuals receiving unemployment insurance at the 3 digit DOT code level for machinery and related work at the first of the year. This figure dropped approximately 32 percent by June to 316. The characteristics report like ESARS is also available at the state and the local office level.

### UNIONS

Many machinists are members of unions including the International Association of Machinists and Aerospace Workers; The International Union, United Automobile, Aerospace and Agricultural Implement Workers of America; the International Union of Electrical, Radio and Machine Workers; The International Brotherhood of Electrical Workers; and The United Steelworkers of America.

The Directory of Labor Organizations 1978 published by the Massachusetts Department of Labor and Industries, consists of four divisions, as follows:

- I. National and International Organizations
- II. Delegate Organization
- III. Local Labor Unions (by municipality)
- IV. Statistics of Labor Organizations

In 1978, there were 226 local unions in Massachusetts representing 87,577 individuals affiliated with metal and machinery trades.



TABLE XIII

| Occupational Group<br>Code and Title                              | JAN.  | FEB.  | MAR.  | APR.  | MAY   | JUNE  |
|---|-------|-------|-------|-------|-------|-------|
| 57 STONE, CLAY, GLASS, & RELATED PRODUCTS                         | 217   | 267   | 64    | 40    | 102   |       |
| 570 Crushing, grinding, & mixing                                  |       |       |       |       |       |       |
| 571 Separating  | 62    |       | 32    |       |       |       |
| 572 Molding   | 31    | 38    |       |       | 34    |       |
| 573 Baking, drying, & heat treating                               |       |       |       |       | 34    |       |
| 574 Impregnating, coating, & glazing                              |       |       |       |       |       |       |
| 575 Forming   | 62    | 76    |       |       | 34    |       |
| 579 Processing, nonmetallic minerals & related products, n.e.c.   | 62    | 153   | 32    | 40    |       |       |
| 58 LEATHER, TEXTILES, & RELATED PRODUCTS                          | 248   | 458   | 319   | 321   | 171   | 349   |
| 580 Shaping, blocking, stretching, & tanning                      |       |       |       |       |       |       |
| 581 Separating, filtering, & drying                               | 62    |       | 32    | 40    |       | 95    |
| 582 Washing, steaming, & saturating                               |       |       | 32    | 40    | 34    | 32    |
| 583 Ironing, pressing, glazing, staking, calendering, & embossing |       | 38    | 95    |       |       |       |
| 584 Mercerizing, coating, & laminating                            |       |       |       |       |       |       |
| 585 Singeing, cutting, shearing, shaving, & napping               | 31    | 38    | 32    | 40    | 34    | 32    |
| 586 Felting and fulling   |       |       |       | 80    | 34    |       |
| 587 Brushing and shrinking  |       | 115   | 64    |       |       |       |
| 589 Processing, leather & textiles, n.e.c.                        | 155   | 229   | 64    | 121   | 69    | 190   |
| 59 PROCESSING OCCUPATIONS, N.E.C.                                 | 62    | 153   | 64    |       | 103   | 32    |
| 590 Processing, assorted materials                                |       | 38    |       |       |       |       |
| 599 Miscellaneous processing, n.e.c.                              | 62    | 115   | 64    |       | 103   | 32    |
| MACHINE TRADES  | 6,392 | 9,360 | 6,550 | 5,339 | 5,227 | 4,492 |
| 60 METAL MACHINING  | 1,273 | 2,253 | 1,811 | 1,085 | 1,208 | 917   |
| 600 Machining and related work                                    | 466   | 1,069 | 667   | 322   | 382   | 316   |
| 601 Toolmaking and related work                                   | 62    | 38    | 95    |       | 69    | 126   |
| 602 Gear machining  |       |       |       |       |       |       |
| 603 Abrading  | 31    | 115   | 64    | 80    | 69    | 32    |
| 604 Turning   |       | 115   | 95    |       | 103   |       |



TABLE XIII (continued)

| Occupational Group<br>Code and Title               | JAN.  | FEB.  | MAR.  | APR.  | MAY   | JUNE  |
|--|-------|-------|-------|-------|-------|-------|
| 605 Milling and planing                            |       |       | 32    |       |       |       |
| 606 Boring   |       |       | 32    | 40    | 34    |       |
| 607 Sawing   |       |       |       |       |       |       |
| 609 Metal machining, n.e.c.                        | 714   | 916   | 826   | 643   | 551   | 443   |
| 61 METALWORKING OCCUPATIONS, N.E.C.                | 1,304 | 1,488 | 922   | 884   | 652   | 854   |
| 610 Hammer forging                                 |       | 76    | 32    |       |       | 63    |
| 611 Press forging                                  |       |       |       |       | 34    | 95    |
| 612 Forging, n.e.c.                                | 62    |       |       |       |       |       |
| 613 Sheet and bar rolling                          |       |       |       | 40    | 34    | 95    |
| 614 Extruding and drawing                          |       | 38    | 64    |       | 103   | 32    |
| 615 Punching and shearing                          | 31    | 76    | 127   | 121   | 172   | 411   |
| 616 Fabricating machine work                       | 559   | 878   | 222   | 241   | 34    | 126   |
| 617 Metal forming, n.e.c.                          | 62    |       | 64    | 40    | 275   |       |
| 619 Miscellaneous metalworking, n.e.c.             | 590   | 420   | 413   | 442   |       |       |
| 62, 63 MECHANICS & MACHINERY REPAIRMEN             | 1,675 | 1,832 | 1,526 | 1,324 | 1,616 | 1,297 |
| 620 Motorized vehicle & engineering equip. rep.    |       |       |       |       |       |       |
| 621 Aircraft repairing                             | 869   | 1,107 | 794   | 482   | 895   | 822   |
| 622 Rail equipment repairing                       | 62    | 38    | 95    | 80    | 103   | 32    |
| 623 Marine equipment repairing                     |       |       |       |       |       |       |
| 624 Farm machinery repairing                       | 93    | 38    | 32    |       | 69    |       |
| 625 Engine, power transmission, & rel. equip. rep. | 31    |       |       |       |       | 63    |
| 626 Metalworking machinery repairing               | 31    | 38    | 32    | 80    | 69    |       |
| 627 Printing & publishing machinery repairing      | 93    | 38    |       | 40    | 34    |       |
| 628 Textile machinery & equipment repairing        |       |       | 64    | 80    | 69    | 63    |
| 629 Special industry machinery repairing           |       | 38    | 32    | 40    |       | 32    |
| 630 General industry machinery repairing           | 31    | 76    |       | 40    | 34    |       |
| 631 Powerplant machinery repairing                 |       |       |       |       | 34    |       |
| 632 Ordnance & accessory repairing                 | 31    |       |       |       |       |       |
| 633 Business & commercial machine repairing        |       | 38    |       |       | 34    |       |
| 637 Utility equipment repairing                    | 31    | 153   | 127   | 80    | 34    | 63    |
| 638 Misc. machine installation & repairing         | 372   | 115   | 286   | 362   | 172   | 190   |
| 639 Mechanical repairing, n.e.c.                   | 31    | 115   | 64    | 40    | 69    | 32    |



OCCUPATIONS OF THE INSURED UNEMPLOYED  
STATEWIDE

MAY-JUNE 1978

|                        |     | ALL AGES<br>NUMBER | PER.  | UNDER<br>45 YRS. | OVER<br>45 YRS. | NOT<br>AVAIL |
|------------------------|-----|--------------------|-------|------------------|-----------------|--------------|
| TOTAL                  |     | 72757              | 100.0 | 44218            | 28539           | 362          |
| MACHINING & RELATED    | 600 | 353                | .5    | 203              | 150             | -            |
| TOOLMAKING & RELATED   | 601 | 99                 | .1    | 34               | 65              | -            |
| GEAR MACHINING         | 602 | -                  | -     | -                | -               | -            |
| ABRADING               | 603 | 70                 | .1    | 56               | 14              | -            |
| TURNING                | 604 | 46                 | .1    | 36               | 10              | -            |
| MILLING & PLANING      | 605 | 65                 | .1    | 47               | 18              | -            |
| BORING                 | 606 | 54                 | .1    | 31               | 23              | -            |
| SAWING                 | 607 | 23                 | -     | 18               | 5               | -            |
| METAL MACHINING NEC    | 609 | 624                | .9    | 404              | 219             | -            |
| HAMMER FORGING         | 610 | 126                | .2    | 107              | 19              | -            |
| PRESS FORGING          | 611 | 10                 | -     | 7                | 3               | -            |
| FORGING NEC            | 612 | 9                  | -     | -                | 9               | -            |
| SHEET & BAR ROLLING    | 613 | 10                 | -     | -                | 10              | -            |
| EXTRUDING & DRAWING    | 614 | 21                 | -     | 17               | 4               | -            |
| PUNCHING & SHEARING    | 615 | 91                 | .1    | 60               | 30              | 4            |
| FABRICATING MACHINE    | 616 | 383                | .5    | 258              | 125             | 4            |
| METAL FORMING NEC      | 617 | 88                 | .1    | 76               | 12              | -            |
| MISC METALWORKING      | 619 | 347                | .5    | 234              | 113             | -            |
| MOTORIZED VEHICLE&ENG. | 620 | 817                | 1.1   | 616              | 201             | 8            |
| AIRCRAFT REPAIRING     | 621 | 69                 | .1    | 62               | 7               | -            |
| RAIL EQUIP REPAIRING   | 622 | 7                  | -     | 7                | -               | -            |
| MARINE EQUIP REPAIR    | 623 | 18                 | -     | 15               | 3               | -            |
| FARM MACHINERY REPAIR  | 624 | -                  | -     | -                | -               | -            |
| ENGINE, POWER TRANSM   | 625 | 32                 | -     | 29               | 3               | -            |
| METALWORKING MACHINE   | 626 | 15                 | -     | 4                | 11              | -            |
| PRINT&PUB MACHINERY    | 627 | 5                  | -     | 5                | -               | -            |
| TEXTILE MACH&EQUIP     | 628 | 3                  | -     | -                | 3               | -            |
| SPEC INDUSTRY MACH     | 629 | 10                 | -     | 7                | 3               | -            |
| CARD, COMB, DRAW, REL  | 680 | 31                 | -     | 24               | 7               | -            |
| TRIST, BEAM, WRAP, REL | 681 | 26                 | -     | 17               | 9               | 2            |
| DPINNINH               | 682 | -                  | -     | -                | -               | -            |
| WEAVING & RELATED      | 683 | 32                 | -     | 5                | 27              | -            |
| HOSIERY KNITTING       | 684 | 5                  | -     | -                | 5               | -            |
| KNIT, EXCEPT HOSIERY   | 685 | 18                 | -     | 12               | 6               | -            |
| PUNCH, CUT, FORM RELAT | 686 | 14                 | -     | 7                | 6               | -            |
| TEXTILE MACHINE WORK   | 689 | 76                 | .1    | 41               | 36              | -            |
| PLASTICS, SYNTHETICS,  | 690 | 530                | .7    | 194              | 336             | -            |
| INSULATED WIRE&CABLE   | 691 | 87                 | .1    | 57               | 30              | -            |
| FABRICATION OF PROD    | 692 | 57                 | .1    | 31               | 26              | -            |
| MODELMAK, PATTERNMAK   | 693 | -                  | -     | -                | -               | -            |
| FABRICAT/AMMO ETC      | 694 | 4                  | -     | 4                | -               | -            |
| MISC. MACHINE WORK     | 699 | 102                | .1    | 57               | 45              | -            |
| FAB/ASBL&REPR METAL    | 700 | 45                 | .1    | 45               | -               | -            |





Licensed Practical Nurse  
(D.O.T. 079.378)

Licensed practical nurses provide skilled nursing care to sick, injured, handicapped, and convalescent patients in hospitals, clinics, private homes, sanitariums and other institutions. Under the supervision of physicians and registered nurses they take and record temperature, blood pressure, pulse, and respiration rates. Duties also include the dressing of wounds, giving alcohol rubs and massages, applying compresses, and reporting on the general condition of the patient. They may also administer medication, perform routine laboratory tests, and use some general medical equipment. A licensed practical nurse must pass a state board examination and be licensed by the state.

In Massachusetts, in order for a person to be eligible to take the state board examination, they must file an application with satisfactory proof of good moral character and proof that they have graduated from an approved school of practical nursing or have completed a program of study equivalent to that required for graduation as a practical nurse from an accredited school of professional nursing. The licenses are valid for a period of two years and are renewable upon payment of a fee. Currently in Massachusetts there are approximately 40,000 persons holding active licenses for practical nursing.

Nationally the employment outlook for licensed practical nurses is favorable and is expected to remain so through the mid 1980's. The demand for this occupation will be above the average for all occupations in response to a growing population and the expansion of public and private health care facilities. In addition demand will be generated to replace those who die, retire, or leave the occupation for other reasons. In Massachusetts this demand can be expected to be above the national average as the health service industry is projected to be one of the fastest growing for the state into the 1980's.



Field surveys on licensed practical nurses were conducted at nursing homes and hospitals in all of the labor market areas with the exception of the Boston SMSA. Information regarding the Boston SMSA was derived from the report "An Analysis of Sources of Labor Supply to High Demand Occupations in the Boston SMSA", prepared by the Research Department of the Massachusetts Department of Manpower Affairs.

### Sources of Recruitment

The sources of recruitment surveyed included use of agencies, advertising, internal recruitment, and direct applications. The most widely used source statewide was direct applications with 85 percent of the establishments surveyed stating that this method of obtaining licensed practical nurses was used. In Brockton, Fall River, New Bedford, and Pittsfield all of the employers stated that direct applications were used to some extent. Lawrence and Worcester had the lowest use of direct applications with 60 percent of the employers interviewed utilizing this method. The second most widely used method of recruitment was advertising, in this case, use of newspaper ads. In only two of the labor market areas, New Bedford and Worcester, did all of the employers surveyed make use of advertising. However, in all of the areas a majority did rely on this method to some degree. Use of agencies and internal recruitment were other methods of recruitment utilized by employers. In the case of agency use, the majority went directly to the placement offices of educational facilities that provided training for the occupation. Referrals from current employees was the most popular form of internal recruitment used by the employers surveyed; however some of them did state that they relied on promotions and rehires to fill some of their LPN needs.

In the area of the most frequent source of recruitment utilized statewide there was no clear cut majority favoring one particular method. The greatest number (39%) said their most frequent source was the use of an agency, in this case, educational institutions. The second most popular method of recruitment was direct applications with 27 percent indicating that this was used most frequently. The Worcester Labor Market Area was the only one where all of the employers surveyed used the same source most frequently.



TABLE I

Sources of Recruitment  
For Licensed Practical Nurse by Labor Market Area

|                              | State-wide |     | Brockton Fall River |     | Fitchburg |     | Lawrence |     | Lowell |     | New Bedford |     | Springfield |     | Worcester |     | Boston |     | Pittsfield |     |    |
|------------------------------|------------|-----|---------------------|-----|-----------|-----|----------|-----|--------|-----|-------------|-----|-------------|-----|-----------|-----|--------|-----|------------|-----|----|
|                              | No.        | %   | No.                 | %   | No.       | %   | No.      | %   | No.    | %   | No.         | %   | No.         | %   | No.       | %   | No.    | %   | No.        | %   |    |
| TOTAL                        | 66         | 100 | 5                   | 100 | 5         | 100 | 5        | 100 | 6      | 100 | 5           | 100 | 5           | 100 | 5         | 100 | 19     | 100 | 6          | 100 |    |
| Use of an Agency             | 44         | 66  | 4                   | 80  | 3         | 60  | 3        | 60  | 2      | 40  | 3           | 50  | 2           | 40  | 5         | 100 | 13     | 68  | 4          | 66  |    |
| (1) public                   | 15         | 23  | 1                   | 20  | 2         | 40  | 1        | 20  | -      | -   | 2           | 33  | 2           | 40  | -         | -   | 2      | 10  | 1          | 16  |    |
| (2) private                  | 5          | 8   | 0                   | -   | 1         | 20  | 1        | 20  | -      | -   | 1           | 16  | -           | -   | -         | -   | 1      | 5   | 1          | 16  |    |
| (3) educational              | 36         | 54  | 3                   | 60  | 3         | 60  | 3        | 60  | 2      | 40  | 3           | 50  | 1           | 20  | 4         | 80  | 5      | 26  | 2          | 33  |    |
| Advertising                  | 49         | 74  | 4                   | 80  | 3         | 60  | 3        | 60  | 3      | 60  | 3           | 50  | 5           | 100 | 4         | 80  | 5      | 26  | 2          | 33  |    |
| (1) newspapers               | 48         | 73  | 4                   | 80  | 3         | 60  | 3        | 60  | 3      | 60  | 3           | 50  | 5           | 100 | 3         | 60  | 5      | 26  | 2          | 33  |    |
| (2) trade journals           | 1          | 2   | 1                   | 20  | -         | -   | -        | -   | -      | -   | -           | -   | 0           | -   | -         | -   | 0      | -   | -          | -   |    |
| (3) professional association | 2          | 3   | 1                   | 20  | -         | -   | -        | -   | -      | -   | -           | -   | 1           | 20  | -         | -   | 0      | -   | -          | -   |    |
| Internal Recruitment         | 47         | 71  | 5                   | 100 | 5         | 100 | 5        | 100 | 1      | 20  | 5           | 83  | 5           | 100 | 5         | 100 | 1      | 20  | 14         | 74  |    |
| (1) rehires                  | 21         | 32  | 4                   | 80  | 5         | 100 | 1        | 20  | -      | -   | 1           | 16  | 5           | 100 | 5         | 100 | 0      | -   | -          | -   |    |
| (2) promotions               | 17         | 26  | 0                   | -   | 4         | 80  | 5        | 100 | 2      | 33  | 1           | 20  | 5           | 100 | 0         | -   | 0      | -   | -          | -   |    |
| (3) referrals from employees | 40         | 61  | 4                   | 80  | 5         | 100 | 2        | 40  | 1      | 20  | 4           | 66  | 4           | 80  | 5         | 100 | 1      | 20  | 14         | 74  |    |
| Direct Applications          | 56         | 85  | 5                   | 100 | 5         | 100 | 4        | 80  | 3      | 60  | 4           | 66  | 5           | 100 | 4         | 80  | 3      | 60  | 17         | 89  |    |
| Most Frequent Source         |            |     |                     |     |           |     |          |     |        |     |             |     |             |     |           |     |        |     |            |     |    |
| Agencies                     | 26         | 39  | 1                   | 20  | -         | 3   | 60       | 1   | 20     | 2   | 33          | 2   | 40          | 4   | 80        | 5   | 100    | 7   | 37         | 1   | 16 |
| public                       | 2          | 3   | -                   | -   | -         | -   | -        | -   | -      | -   | -           | 1   | 20          | 1   | 20        | -   | -      | -   | -          | -   | -  |
| private                      | -          | -   | -                   | -   | -         | -   | -        | -   | -      | -   | -           | -   | -           | -   | -         | -   | -      | -   | -          | -   | -  |
| educational                  | 24         | 36  | 1                   | 20  | -         | 3   | 60       | 1   | 20     | 2   | 33          | 1   | 20          | 3   | 60        | 5   | 100    | 7   | 37         | 1   | 16 |
| Advertising                  | 12         | 18  | 2                   | 40  | 1         | 20  | -        | -   | 3      | 60  | 3           | 60  | 0           | -   | -         | -   | 2      | 10  | 1          | 16  |    |
| newspapers                   | 12         | 18  | 2                   | 40  | 1         | 20  | -        | -   | 3      | 60  | 3           | 60  | 0           | -   | -         | -   | 2      | 10  | 1          | 16  |    |
| trade journals               | -          | -   | -                   | -   | -         | -   | -        | -   | -      | -   | -           | -   | -           | -   | -         | -   | -      | -   | -          | -   | -  |
| professional association     | -          | -   | -                   | -   | -         | -   | -        | -   | -      | -   | -           | -   | -           | -   | -         | -   | -      | -   | -          | -   | -  |
| Internal                     | 8          | 12  | 1                   | 20  | -         | 1   | 20       | -   | -      | 2   | 33          | -   | 0           | -   | -         | -   | 4      | 21  | -          | -   | -  |
| rehires                      | -          | -   | -                   | -   | -         | -   | -        | -   | -      | -   | -           | -   | -           | -   | -         | -   | -      | -   | -          | -   | -  |
| promotions                   | 1          | 2   | -                   | -   | -         | -   | -        | -   | -      | -   | -           | -   | -           | -   | -         | -   | -      | -   | -          | -   | -  |
| referrals from employees     | 7          | 11  | 1                   | 20  | -         | 1   | 20       | -   | -      | 2   | 33          | -   | -           | -   | -         | -   | 4      | 21  | -          | -   | -  |
| Direct applications          | 18         | 27  | 1                   | 20  | 4         | 80  | 1        | 20  | 1      | 20  | 2           | 33  | 1           | 20  | 4         | 80  | 4      | 21  | 4          | 66  |    |



In Worcester educational institutions was the most frequent source used by all of the establishments interviewed.

Overall the survey showed that employers take advantage of all avenues available to them in recruiting to fill their LPN needs. There was no area in which there was negative response, although advertising in trade journals and through professional associations were the least used possible sources. For the net high demand occupation of Licensed Practical Nurse, Massachusetts employers are multi-mechanism recruiters.

#### Wages

Entry wages for Licensed Practical Nurses with no experience ranged from a low of \$3.00 per hour to a high of \$4.95 per hour. Starting wages for those with one year experience had a range from \$3.65 per hour to \$5.20 per hour. In general starting wages were higher with one year experience in all of the labor market areas surveyed.

Average hourly earnings for a licensed practical nurse ranged from \$4.28 per hour to \$5.04 per hour. The highest average hourly wages were paid in the Brockton Labor Market Area; however this was due to the fact that in most of the establishments surveyed, the majority of the LPN's employed were earning very close to the maximum on the pay scales. This would seem to indicate that there is a rather low turnover rate for this occupation in that area. The second highest average wages were in the Boston SMSA with \$4.88 per hour.

The lowest average wages were reported for the New Bedford Labor Market Area, with \$4.28 per hour, followed by Worcester Labor Market Area with \$4.45 per hour.





Average Hourly Earnings  
L. P. N.  
by Labor Market Area

|                    | Average<br>Hourly Wage | Rank |
|--------------------|------------------------|------|
| Boston             | 4.88                   | 2    |
| Brockton           | 5.04                   | 1 *  |
| Fall River         | 4.50                   | 7    |
| Fitchburg          | 4.75                   | 4    |
| Lawrence-Haverhill | 4.52                   | 6    |
| Lowell             | 4.75                   | 4    |
| New Bedford        | 4.28                   | 9    |
| Pittsfield         | 4.57                   | 5    |
| Springfield        | 4.83                   | 3    |
| Worcester          | 4.45                   | 8    |

\* See narrative.



Entry Wages  
Licensed Practical Nurses

| Total Firms      | With No. | Prev. Exp. | With 1 yr. | Prev. Exp. |
|------------------|----------|------------|------------|------------|
|                  | 44       | 100.0%     | 43         | 100.0%     |
| Wages under 3.50 | 3        | 6.8        | 1          | 2.3        |
| 3.50 - 3.59      | 1        | 2.3        | 0          | -          |
| 3.60 - 3.69      | 2        | 4.5        | 1          | 2.3        |
| 3.70 - 3.79      | 2        | 4.5        | 2          | 4.7        |
| 3.80 - 3.89      | 0        | -          | 1          | 2.3        |
| 3.90 - 3.99      | 2        | 4.5        | 1          | 2.3        |
| 4.00 - 4.09      | 8        | 18.2       | 7          | 16.3       |
| 4.10 - 4.19      | 1        | 2.3        | 2          | 4.7        |
| 4.20 - 4.29      | XXX3     | 6.8        | 5          | 11.6       |
| 4.30 - 4.39      | 3        | 6.8        | XXX1       | 2.3        |
| 4.40 - 4.49      | 11       | 25.0       | 6          | 14.0       |
| 4.50 - 4.59      | 6        | 13.7       | 7          | 16.3       |
| 4.60 - 4.69      | 1        | 2.3        | 4          | 9.3        |
| 4.70 - 4.79      | 0        | -          | 3          | 7.0        |
| 4.80 - 4.89      | 0        | -          | 0          | -          |
| 4.90 - 4.99      | 1        | 2.3        | 1          | 2.3        |
| 5.00 and over    | 0        | -          | 1          | 2.3        |

1/ XXX = Median



### Growth in the Occupation

Statewide occupational projections to 1985 show employment levels for licensed practical nurses increasing by 50 percent during the period 1974-1985. In addition to openings created by this growth in the occupation, it is anticipated that there will be a large number of openings for replacement needs during this same time period.

The employers surveyed in the various labor market areas indicated that the majority of hires in the occupation were for replacement needs, although some new positions had been created during the 1976-1978 period. This trend of high replacement demand was projected by the employers to continue through 1979.

It can be fairly safely assumed that the trends projected for this occupation will hold true for the coming years. Not only does this area already have an extensive health service industry, but also it is expected to be one of the fastest growing industries into the 1980's. This expansion of health service can be expected to result in an increased demand for workers at all occupational levels.

Annual Average Number of Job Openings  
Practical Nurses  
By Labor Market Area  
1974-1985

|                              | TOTAL | DUE TO<br>GROWTH | DUE TO<br>Replacement |
|------------------------------|-------|------------------|-----------------------|
| Boston                       | 1,226 | 431              | 795                   |
| Brockton                     | 569   | 184              | 385                   |
| Fall River                   | 627   | 198              | 429                   |
| Fitchburg-Leominster         | 353   | 122              | 231                   |
| Lawrence-Haverhill           | 1,426 | 480              | 946                   |
| Lowell                       | 617   | 67               | 550                   |
| New Bedford                  | 736   | 252              | 484                   |
| Worcester                    | 181   | 63               | 118                   |
| Springfield Chicopee Holyoke | 258   | 78               | 180                   |
| Pittsfield                   | 661   | 221              | 440                   |

Source: Division of Employment Security  
Occupation/Industrial Research Dept.



The field survey indicated that the demand for Licensed Practical Nurses would be greater in nursing-convalescent homes than in hospitals.

The increase in demand for Licensed Practical Nurses in long-term care facilities was due to cost-consciousness and regulations concerning staffing patterns contained in Chapter 223, section 75, General Laws of Massachusetts.

The decrease in demand for Licensed Practical Nurses in some hospitals was a combination of reasons the foremost of which is a decline in the average length of hospitals confinement for patients. The decline in length of confinement was attributed to preventative medicine advancement, utilization of outpatient clinics, and the regulations of commercial insurers and Medicaid. Furthermore, many nursing specialties such as cardiac intensive care, renal dialysis, and burns treatment require highly specialized knowledge and training.

Chapter 884, Section 2 of the General Laws requires "that beginning January first, nineteen hundred and eighty-three, every person seeking renewal or licensing hereunder shall provide evidence of such continuing education as the board shall require by regulation, unless the board accepts the training and experience of any such person in lieu of said continuing education requirements". The enforcement of this regulation may impact on Licensed Practical Nurses who have renewed their license every two years, but have not had recent employment in nursing.





## Licensed Practical Nurses - Supply in Massachusetts

Currently there are 40,000 registered Licensed Practical Nurses in the Baystate. \* Added to this figure yearly are the graduates of the vocational and hospital training programs. During 1978, there were 1,183 new graduates of practical nursing programs throughout the state.

Vocational schools accounted for better than two-thirds of the graduates with 814 (69 percent), and hospital programs turned out the remaining 369 (31 percent). The larger labor market areas produced the greater number of graduates. Boston and Springfield each had 632 and 124 respectively.

Eleven schools responded to a brief survey questionnaire. Although they are not actually representative of schools across the state, they still might serve as an indicator of conditions typical with other schools. These schools anticipated slight growth in enrollment over the next two years. They estimate a gradual increase of 4.8 percent between 1978 and 1979 and a 6.6 percent increase between 1978 and 1980. They also indicated that the vast majority of the LPN graduates remained within the labor market area and with their profession. Table 1 provides a Labor Market Area overview of the supply of Licensed Practical Nurses who graduate from Vocational Technical Schools.

Table 2 indicates the number of graduates from approved schools of practical nursing in calendar year 1978.

\*Commonwealth of Massachusetts, Board of Registration in Nursing



Table II  
Occupational Supply Sources Survey  
of Licensed Practical Nurses  
by Labor Market Area

| Short Term Supply<br>of Students   | Brockton LMA<br>Southeast<br>Reg. Tech. | Pittsfield-North Adams LMA |                 | Fall River<br>Dinan | Lowell-Law.<br>G. Lowell Tech. | Fitchburg-Leominster<br>Mont. Reg. Leo. Trade | Springfield-Holyoke |                       |    |     |
|--|---|----------------------------|-----------------|---------------------|--------------------------------|---|---------------------|-----------------------|----|-----|
|  |   | Pitt. H. S.                | Smith<br>McCann |                     |                                |   | Western H. S.       | Putnam Voc. Dean Voc. |    |     |
| Total Graduates<br>in June 1978  | 38                                      | 31                         | 20              | 20                  | 57                             | 26  | 21                  | 55                    | 40 | 23  |
| Estimated Graduates<br>in June 1979  | 40                                      | 30                         | 27              | 20                  | 57                             | NA  | NA                  | 55                    | 36 | 21  |
| Estimated Graduates<br>in June 1980  | 42                                      | 36                         | 21              | 20                  | 57                             | NA  | NA                  | 55                    | 36 | 21  |
| Estimate of Number<br>or Percent of<br>Graduates Who<br>Remain in<br>Their Trade | 100%                                    | 99                         | 97              | 80-85               | 75                             | 86%   | NA                  | 95                    | 90 | 100 |
| Estimate of Number<br>or Percent of<br>Graduates Who<br>Remain in the LMA        | 100%                                    | 69                         | 95              | 75                  | 81                             | NA  | NA                  | 95                    | 90 | 95  |



Table III  
Approved Schools of Practical Nursing

| Hospital<br>or<br>Vocational School | Labor Mkt.<br>Area   | # of<br>Graduates<br>1978 | Name of<br>School                     | City or<br>Town |
|-------------------------------------|----------------------|---------------------------|---------------------------------------|-----------------|
| V                                   | Barnstable Cty.      | 18                        | Upper Cape Cod Region Voc..Tech.      | Bourne          |
| V                                   | Boston SMSA          | 30                        | Boston Public School P.N. Program     | Boston          |
| V                                   | Boston SMSA          | 24                        | Boston Public School Evening Program  | Boston          |
| H                                   | Boston SMSA          | 84                        | Boston City Hospital                  | Boston          |
| V                                   | Boston SMSA          | 40                        | Essex Agric. & Tech. Inst.            | Danvers         |
| H                                   | Boston SMSA          | 31                        | Lemuel Shattuck Hospital              | Boston          |
| H                                   | Boston SMSA          | 27                        | Pondville Hospital                    | Walpole         |
| V                                   | Boston SMSA          | 28                        | Northeast Metropolitan Reg. Voc.Sch.  | Wakefield       |
| V                                   | Boston SMSA          | 165                       | Henry Peabody School                  | Norwood         |
| V                                   | Boston SMSA          | 33                        | Quincy Vocation Tech. School          | Quincy          |
| H                                   | Boston SMSA          | 49                        | Shepard Gill School of Mass.          | Boston          |
| H                                   | Boston SMSA          | 29                        | Soldiers Home School of P. N.         | Chelsea         |
| V                                   | Boston SMSA          | 22                        | Waltham Voc. Tech. School             | Waltham         |
| H                                   | Boston SMSA          | 70                        | Youville Hospital School of P. N.     | Cambridge       |
| V                                   | Brockton SMSA        | 38                        | Southeastern Reg. Voc. Tech. School   | Easton          |
| V                                   | Fall River SMSA      | 57                        | Diman Regional Voc. Tech. School      | Fall River      |
| V                                   | Fitchburg Leominster | 21                        | Leominster Trade High School          | Leominster      |
| V                                   | Fitchburg Leominster | 26                        | Montachussetts Region Voc. Tech. Sch. | Fitchburg       |
| V                                   | Lawrence Haverhill   | 40                        | Greater Lawrence Reg. Tech. Inst.     | Andover         |
| V                                   | Lawrence Haverhill   | 18                        | Whittier Reg. Voc. Tech. School       | Haverhill       |
| V                                   | Lowell               | 30                        | Greater Lowell Voc. School P. N.      | Tyngsborough    |
| H                                   | Lowell               | 36                        | Tewksbury Hospital School of P. N.    | Tewksbury       |
| V                                   | Marlboro             | 32                        | Assabet Valley Reg. Voc. School       | Marlboro        |
| V                                   | Pittsfield           | 20                        | Charles H. McCann Tech. School        | North Adams     |
| V                                   | Pittsfield           | 31                        | Pittsfield Voc. High School           | Pittsfield      |
| V                                   | Springfield          | 23                        | William J. Dear Voc. School           | Holyoke         |
| V                                   | Springfield          | 20                        | Smith's Voc. Tech. School             | Northampton     |
| V                                   | Springfield          | 38                        | Roger L. Putnam Voc. Tech School      | Springfield     |
| H                                   | Springfield          | 43                        | Western Mass. Hospital                | Westfield       |
| V                                   | Worcester            | 60                        | David Hale Fanning School of P. N.    | Worcester       |
|                                     |                      | TOTAL:                    | 1,183                                 |                 |



## ESARS - Employment Service

The Employment Service Automated Reporting System (ESARS) statewide indicates that from October 1, 1977 through March 31, 1978, the number of Licensed Practical Nurses who registered for placement services was 1,114. Thirty-four percent of the LPN's registered for placement service within the Boston SMSA. Of the job orders placed for LPN's within the Boston SMSA, eighty-one percent were filled by applicants referred by the employment service.

Within the Boston SMSA, there were 46 Licensed Practical Nurses who utilized the State Nurses' Registry between October 1, 1977 through March 31, 1978. The number of Registered Nurses using the service was 960. Of the 46 LPN's registered twenty were active in March, 1978.

The Massachusetts State Employment Service maintains a Registry for Private Duty Nurses at hospitals settings. The Registry operates 7 days a week including holidays. (The Unit was fully operational during the February "Blizzard of 78"). To be eligible for private duty referrals the nurse must meet strict established requirements.

The short-term, non-permanent employment attachment of special duty nursing is attractive to both secondary wage-earners and retirees whose annual wages are fixed by pension plans or Social Security requirements.







# *The Commonwealth of Massachusetts*

## OFFICE OF THE SECRETARY STATE HOUSE, BOSTON, MASS.

*Rules and Regulations filed in this Office under the provisions of  
CHAPTER 30A as amended.*

Filed by \_\_\_\_\_ DEPARTMENT OF PUBLIC HEALTH

LICENSING OF LONG-TERM CARE FACILITIES - FEBRUARY, 1977 COMPILATION

Date Filed \_\_\_\_\_ February 18, 1977

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### Chapter 233, sec. 75

Printed copies of rules and regulations purporting to be issued by authority of any department, commission, board or Officer of the Commonwealth or any city or town having authority to adopt them, or printed copies of any ordinances or town by-laws, shall be admitted without certification or attestations, but if this genuineness is questioned, the court may require such certifications or attestations thereof as it deems necessary.

Attested as a true copy

PAUL GUZZI

*Paul Guzzi*

SECRETARY OF THE COMMONWEALTH





- 7.1 All facilities shall provide appropriate, adequate and sufficient nursing services to meet the needs of patients or residents and to assure that preventive measures, treatments, medications, diets, restorative services, activities and related services are carried out, recorded and reviewed.
  - 7.1.1 Facilities that provide Level I, II or III care shall provide a 24-hour nursing service with an adequate number of trained and experienced nursing personnel on duty 24 hours per day, seven days a week, including vacation and other relief periods.
  - 7.1.2 Nursing services in facilities that provide Level I, II, or III care shall be in accordance with written policies and procedures.
  - 7.1.3 Facilities that provide only Level IV care are not required to provide organized, routine nursing services. However, nursing services shall be provided as needed to residents in the case of minor illness of a temporary nature.
- 7.2 Minimum nursing personnel requirements
  - 7.2.1 General
    - 7.2.1.1 Nursing personnel shall not serve on active duty more than 12 hours per day, or more than 43 hours per week, on a regular basis.
    - 7.2.1.2 One director of nurses may cover multiple units of the same or different levels of care within a single facility. One supervisor of nurses may cover up to two units of the same or different levels of care within a single facility.
    - 7.2.1.3 Full-time shall mean 40 hours per week, five days per week.
    - 7.2.1.4 The amount of nursing care time per patient shall be exclusive of non-nursing duties.
    - 7.2.1.5 The minimum staffing patterns and nursing care hours as contained herein shall mean minimum, basic requirements. Additional staff will be necessary in many facilities to provide adequate services to meet patient needs.
    - 7.2.1.6 The supervisor of nurses and the charge nurse, but not the director of nurses, may be counted in the calculation of licensed nursing personnel.
  - 7.2.2 Facilities that provide Level I care shall provide:
    - 7.2.2.1 A full-time director of nurses during the day shift.
    - 7.2.2.2 A full-time supervisor of nurses during the day shift, five days a week for facilities with more than one unit. In facilities with a single unit, the director of nurses may function as supervisor.



- 7.2.2.3 A charge nurse 24 hours per day, seven days a week for each unit.
- 7.2.2.4 Sufficient ancillary nursing personnel to meet patient needs.
- 7.2.2.5 As a basic minimum, facilities that provide Level I care shall provide a total of 2.6 hours of nursing care per patient per day; at least 0.6 hours shall be provided by licensed nursing personnel and 2.0 hours by ancillary nursing personnel.
- 7.2.3 Facilities that provide Level II care shall provide:
- 7.2.3.1 A full-time director of nurses.
- 7.2.3.2 A full-time supervisor of nurses during the day shift, five days a week for facilities with more than one unit. In facilities with only a single unit, the director of nurses may function as supervisor.
- 7.2.3.2.1 A SNCFPC shall provide a full-time supervisor of nurses during the day and evening shifts, five days a week, who shall be a registered nurse and shall have had at least two years of nursing experience, one year of which has been in pediatric nursing.
- 7.2.3.3 A charge nurse 24 hours per day, seven days a week for each unit.
- 7.2.3.3.1 A SNCFPC shall provide a charge nurse, 24 hours-a-day, seven days-a-week for each unit, who shall be a registered nurse and shall have had at least one year of full-time training or experience in pediatric nursing.
- 7.2.3.4 Sufficient ancillary nursing personnel to meet patient needs.
- 7.2.3.5 As a basic minimum, facilities that provide Level II care shall provide a total of 2.0 hours of nursing care per patient per day; at least 0.6 hours shall be provided by licensed nursing personnel and 1.4 hours by ancillary nursing personnel.
- 7.2.3.5.1 As a basic minimum, a SNCFPC shall provide a total of 3.0 hours of nursing care per patient per day; at least 1.0 hours of nursing care shall be provided by licensed nursing personnel and 2.0 hours by ancillary nursing personnel.
- 7.2.4 Facilities that provide Level III care shall provide:
- 7.2.4.1 A full-time supervisor of nurses during the day shift, five days a week, in facilities with more than one unit.



- 7.2.4.1.1 A INCFC shall provide a full-time supervisor of nurses during the day shift, five days-a-week, who shall be a registered nurse and shall have had at least two years of nursing experience, one year of which has been in pediatric nursing.
- 7.2.4.2 A charge nurse during the day and evening shifts, seven days a week, for each unit.
  - 7.2.4.2.1 A INCFC shall provide a charge nurse, 24 hours-a-day, seven days-a-week, for each unit, who shall be a registered nurse and shall have had at least one year of full-time training or experience in pediatric nursing.
- 7.2.4.3 A nurse's aide who is a responsible person, on duty during the night shift.
- 7.2.4.4 Sufficient ancillary nursing personnel to meet patient needs.
- 7.2.4.5 As a basic minimum, facilities that provide Level III care shall provide a total of 1.4 hours of nursing care per patient per day; at least 0.4 shall be provided by licensed nursing personnel and 1.0 hours by ancillary nursing personnel.
  - 7.2.4.5.1 As a basic minimum, an INCFC shall provide a total of 2.0 hours of nursing care per patient per day; at least 0.6 shall be provided by licensed nursing personnel and 1.4 hours by ancillary nursing personnel.
- 7.2.4.6 The facility shall provide additional nursing services, sufficient to meet the needs, in the event a patient has a minor illness and is not transferred to a higher level facility or unit.
- 7.2.5 Facilities that provide Level IV care shall provide:
  - 7.2.5.1 A responsible person on the premises at all times.
  - 7.2.5.2 In facilities with less than 20 beds, at least one "responsible person" on active duty during the waking hours in the ratio of one per ten residents.
  - 7.2.5.3 In facilities with more than 20 beds, at least one "responsible person" on active duty at all times during the 24 hours of the day, seven days a week, per unit.
  - 7.2.5.4 If none of the responsible persons on duty are licensed nurses, then the facility shall provide a licensed consultant nurse, four hours per month per unit. (In multiple level facilities the director or supervisor of nurses may function in this capacity).





### 7.3 Qualifications and Duties

- 7.3.1 Director of Nurses: The Director of Nurses shall be a registered nurse with at least two years of nursing experience, at least one of which has been in an administrative or supervisory capacity. The director of nurses shall be responsible for: development of the objectives and standards of nursing practice and procedures, overall management of nursing personnel, coordination of nursing services, development of staff training programs, and the evaluation and review of patient care and nursing care practices.
- 7.3.2 Supervisor of Nurses: The supervisor of nurses shall be a registered nurse with at least two years of nursing experience, one of which has been in a charge nurse capacity. The supervisor of nurses shall be responsible for: the supervision of nursing care and nursing personnel, the supervision and evaluation of staff assignments and performance, the supervision of patient care, the application and evaluation of patient care plans and the integration of nursing care with other professional services.
- 7.3.3 Charge Nurse: The charge nurse shall be a registered nurse or a licensed practical nurse; provided that, in a Level I or II unit, a practical nurse licensed by waiver may serve in such capacity only if she/he has received a passing grade either on the Massachusetts written state licensure examination given in the years 1953, 1959 and 1960 by the Board of Registration in Nursing or on the federal Public Health Service Proficiency Examination for Practical Nurses Licensed by Waiver given periodically by the Department in accordance with federal regulations. The charge nurse shall be responsible for the performance of total nursing care of the patients in his/her unit during his/her tour of duty with the assistance of ancillary nursing personnel.
- 7.3.4 The Nurse's Aide or the Responsible Person on duty in facilities that provide Level III or IV care shall be readily accessible so that patients or residents can easily report injuries, symptoms, or emergencies. Such person shall be responsible for assuring that appropriate action is taken promptly, and facilities shall be responsible for establishing mechanisms and procedures for the nurse's aide or responsible person to obtain assistance in the case of an emergency.
- 7.3.5 Licensed practical nurses, nurses' aides and orderlies shall be assigned duties consistent with their training and experience.
- 7.3.5.1 A SNCF or INCF shall provide nurses' aides who have training or experience in caring for children. Assignments shall be made so that each patient is cared for by at least one aide who is assigned to care for him on a continuing basis.
- 7.3.6 At no time shall direct patient care be provided by individuals under 16 years of age, housekeeping staff or kitchen workers.
- 7.3.7 Nursing personnel shall not perform housekeeping, laundry, cooking or other such tasks normally performed by maintenance or other personnel.

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